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Textile World

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Textile World

MAY, 1938

DOUGLAS G. WOOLF, *Editor*

We Stick Our Neck Out Again

IT is about time for another editorial inventory. When we last reviewed the passing show in textiles, six months ago, there were more questions than answers. Today, many of those questions have been at least temporarily answered. As a result, we find right now general belief that further decline is unlikely.

At the Knitting Arts Exhibition and at the American Cotton Manufacturers Association dozens of manufacturers used this phrase: "Well, at any rate, I think we've scraped bottom." If enough people think so, why then we have.

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The principal questions which have been answered "at least temporarily" are those arising in Washington. The defeat of the reorganization bill was the first break.

Then, the settlement of the tax question substituted certainty for uncertainty. True, this could and should have been accomplished months ago, and more completely, if the President could have been made to realize—and to admit—that out-and-out repeal of the undistributed profits tax was Recovery Measure No. 1. His failure on this point is one of the blackest marks against him, in our opinion.

However, better late than never; the revised tax structure, even though retaining the principle of the undistributed profits tax, is vastly superior to the old. It is definitely a "go ahead" signal.

The third important Washington development has been the new spending program. No matter how much we may disapprove it in principle, the fact remains that it will tend to arrest the deflationary movement. This was the factor we had in mind when we emphasized, above, the temporary nature of some of these answers.

So much for Washington.

Turning to business, the one most important tangible factor is the improvement in the inventory situation all along the line. This applies to textiles as well as to most other branches of business.

Accompanying this tangible factor is a development of equal rank in the realm of intangibles: the formulation of forward-looking policies by businessmen and their associations.

We mentioned last month the spirit shown by the print cloth group in tackling the third-shift problem; that is an excellent example of what we have in mind. Another was the attitude reflected at the convention of the National Association of Hosiery Manufacturers. Anyone who listened to the statesmanlike address of William H. Gosch, and who heard Earl Constantine report a new high for the membership and support of the association, could not fail to recognize the hosiery division as one which was going places on its own.

A smaller group which has furnished a recent example of constructive action is the Southern Combed Yarn Spinners Association. Its firm stand against wage cuts enheartens all those who—like this writer—see merely degeneration in that direction.

Fortunately, these few examples are not exceptions. The general tendency of the textile industry right now is to shape its destiny through its own constructive action.

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As to the net of all this, in practical terms: Obviously, these developments came to a head too late for a major up-swing this spring. The most logical expectation is for a moderate improvement from now on, with a definitely active movement setting in late in the summer or early in the fall.

If we miss our guess on this one, we'll never make a prediction again—or at least, not until the next time.

"Subdued" A.C.M.A. Meets

Minus fireworks of last Augusta convention, it presents its case calmly

MEMORIES of the rip-snorting convention of the American Cotton Manufacurers Association held at Augusta in 1935 were aroused by this year's meeting of that association in the same place April 29 and 30. The memories however were principally in contrast. Gone were the fireworks of that memorable meeting. As Robert R. West stated in his response to the address of welcome, the 1938 A.C.M.A. convention was quiet, subdued, nonresistant. "We have nothing to argue about," he added.

However, what the program lacked in surface action, it made up in depth. A series of thoughtful addresses portrayed the economic and social contributions of the southern cotton industry.

The retiring president of the association, Robert E. Henry, set a good example to the guest speakers by presenting a masterly summary of the background of the southern textile worker and an analysis of his character and attitudes. On the latter score, he pointed out that the operative is a pioneer, with a pioneer's purposefulness in life and determination to succeed over all hazards, that he is a religious person—an exponent of fundamental religion, and that in education he is ambitious.

"In thinking of this subject of education," he said, "we must always think of the general picture and how this group fits into it. When this is done we believe that perhaps no people in our Southland has made greater educational progress or responded more splendidly to its inspiration and opportunities."

The main feature of Mr. Henry's address was its deep sincerity. He concluded with these remarks:

"In paying this tribute to the southern textile worker there are others who could do so better than I insofar as words and phrases are concerned, but I know of no one who could be more sincere in this effort than I am. I started my business life as a mill worker and still regard myself as a mill worker. I have worked and associated with these people for most of my industrial life. I know them, the genuineness of their character, the nobility of their purposes, their fidelity to this industry.

"I expect to devote the rest of my life serving with them to make our South a good place in which to live, and to help them preserve its traditions and to hand these traditions on to the next generation unsullied and untarnished by strange and foreign ideals and principles.

J. H. Cheatham, elected president of A.C.M.A.

"There is not, and will not be, any class controversy between the southern cotton mill worker and the southern cotton mill executive. We are born of the same stock, we speak the same language and worship the same God."

The significance of the textile worker in southern cotton mills was further amplified by W. M. McLaurine, secretary of A.C.M.A., in his annual report. Pointing out that the vast majority of mills are adhering to code standards of wages and hours, he added that southern mill men also are honestly endeavoring to comply with the spirit of sound social economics and industrial progress. "No one will claim that conditions are perfect, that there are no weak spots, that there are no evils," declared Secretary McLaurine. "The main point to be considered is the point of departure and the point of destination, the amount of progress that has been made, and whether or not progress still continues."

Robert E. Henry, retiring president, addressing Augusta meeting

Mr. McLaurine praised the recent style show held in Charlotte, sponsored jointly by the Cotton-Textile Institute and A.C.M.A., in which 68 young women who operate machines in cotton mills acted as models. This was the first time that the girls who actually make the fabrics have ever been featured wearing them in a style show.

With reference to the present recession in business and curtailment in mill operation, Mr. McLaurine said that "each mill man has seriously considered the worker's welfare in the curtailment program even to conferring with Government agencies and giving out definite information and assisting in the securing of unemployment insurance. Concessions in regard to rent, lights, and water have been freely granted."

An outside but informed viewpoint was supplied by Dr. M. L. Brittain, president of Georgia School of Technology, whose subject was "A Friend Views the Southern Textile Industry."

"Critics of conditions in our southern cotton mills rarely take into consideration the common source of supply of the workers," he said. "From the beginning, they have come as a rule from the tenant farmers. . . . The difficulties met and frequently overcome in a fine way by textile leaders in providing work and homes, and in lifting the women and men to a higher step in the scale of civilization, ought certainly to receive commendation."

Dr. Brittain spoke briefly of the work done by the Textile Foundation in the field of textile education—and mentioned particularly Franklin W. Hobbs, F. M. Feiker, and E. T. Pickard.

Leaving the subject of the textile industry's social contributions the next speaker, Julian E. Miller, editor of the *Charlotte Observer*, discussed the broader phases of the industry's economic contributions to the South. "Industry," he said in his preliminary remarks, "can be defined as merely the American people honestly, legitimately, thriftily, and sometimes profitably at work."

The cotton-textile industry is worth a billion dollars, he pointed out, with $720,000,000 of the value created in the South. "Yet," he warned, "the economic self-containment of the South can be materially destroyed by policies which encourage and impose an economy of scarcity at home while an abundance in both production and manufacture of cotton is being developed abroad."

Referring to attacks recently made on the South by various publications, Mr. Miller branded such articles as false and misleading, and said that "such attempts always tumble of their own rottenness and perish of their own poison." He pointed out that the records of the Federal Government itself show that southern industry pays out more of its manufacturing income for wages than is paid by northern manufacturers, and added that if the southern manufacturer paid out in wages every dollar he receives for the sale of his goods (except what is paid for cotton) the worker would receive only $22 a week instead of the average $16 wage he now gets.

In conclusion, Mr. Miller warned that the American spirit of freedom and democracy seems to be leaking out of the mass-American mind in favor of some of the totalitarian philosophies of today. While he does not think that we can go back to the old days of cutthroat individualism, he said that he speaks "the language of American business and industry in demanding that the established economy of free enterprise and honest competition be retained."

One of the clearest and most comprehensive analyses of the future of cotton as a textile fiber was given at the Saturday session by Dr. Claudius T. Murchison, president of the Cotton-Textile Institute. His remarks plainly showed how cotton is gradually losing out to competitive fibers. But the bright side of the picture—the only real solution to the problem—was also offered. He suggested formation of an over-all, unifying agency, composed of mills, growers, shippers, converters, and bankers, which would carry out a well-defined plan to increase the use of cotton.

Approach to the problem of preserving the great national asset of cotton, not merely in the interest of the mills (which can adopt other fibers), but in the interest of the entire nation, is along three lines:

1. Establishment of scientific laboratory experimentation for the development of new uses for existing fabrics as well as development of new finishes and qualities.

2. Improvement in merchandising the qualities of cotton fabrics.

3. More effective effort in directing the attention of the public to the values of cotton products.

In some foreign countries, said Dr. Murchison, the Governments are requiring that all cotton goods manufactured for home consumption contain up to 30% synthetic fibers. The effect of these plans on our cotton farmers can easily be seen, but superficially they may appear to have little effect on our own mills which manufacture primarily for domestic consumption, yet actually the same thing is happening here, the only difference being the motive. He continued substantially as follows:

"The evidence is unmistakable that the per capita cotton consumption in the United States appears definitely to be on the wane. But the statistics of our own industry taken alone indicate no immediate crisis. The future becomes alarming for cotton only when we unite the record of our own activity with that of competing industries, rayon, paper, and jute. As a textile industry we will continue undiminished in structure, but we may not be to so great an extent a *cotton* textile industry. Rayon production has grown from 75,500,000 lb. in 1927 to 332,336,000 lb. produced during the last year. Today, one-fourth as much rayon as cotton is going into women's wear, with the percentage of rayon increasing rapidly. As to paper, one billion pounds of kraft paper is annually going into bags, two billion pounds of paper into towels, and one hundred million pounds into napkins. Jute is also cutting into cotton."

The remainder of the Saturday morning session was devoted to routine business matters which included the following committee reports: Cotton, W. M. McLaurine, in the absence of A. K. Winget, Albermarle, N. C.; Traffic, R. R. West, Danville, Va.; Student Loan Fund, Thomas H. Webb, Concord, N. C.; Textile Foundation and National Industrial Board, Inc., Stuart W. Cramer, Cramerton, N. C., General Arbitration Board, George P. Ray, New York, N. Y.

John H. Cheatham, president of Georgia-Kincaid Mills, Griffin, Ga., was elected president of the association, succeeding Mr. Henry. K. P. Lewis, of Durham, N. C., second vice-president, moved up to the first vice-presidency. Robert R. West, Danville, Va., was named second vice-president. New directors elected include Scott Russell, W. H. Entwistle, Chas. A. Cannon, Hugh Comer, W. S. Montgomery, and Arthur Emery.

The annual banquet was held Friday evening, with Dr. John L. Davis, of New York, as guest speaker. Honor guests included: Dr. M. L. Brittain, Dr. Nicholson, L. W. (Chip) Robert, Dr. Claudius T. Murchison, Stuart W. Cramer, Russell T. Fisher, W. Ray Bell, S. M. Beattie, Paul K. McKenney, R. W. Jennings, A. W. McLellan, Walter Hogg, J. H. Cheatham, and George A. Sloan.

(Left to right) William L. McLaurine, secretary A.C.M.A.; Dr. M. L. Brittain (Georgia Tech) and Julian Miller ("Charlotte Observer"), speakers before convention at Augusta

Cotton Fashion Show

In Charlotte, first of series staged through the South

Costumes for summer wedding—bride and bridesmaid—using white shadow printed organdie for the former and corded turquoise net with matching hat for the latter

Courtesy Cotton-Textile Institute

FIRST 1938 cotton fashion show of several throughout the Southern States was Charlotte's Carolina Cotton Festival presented through the cooperation of the Cotton-Textile Institute and the American Cotton Manufacturers' Association on April 12, viewed by approximately 3,000. Other shows staged by the Institute included Spartanburg, S. C., Greenville, S. C., Augusta, Ga., Birmingham, Ala., Dallas, Tex., Memphis, Tenn., Washington, D. C., and Lynchburg, Va.

The program of the Charlotte fashion show was divided into two distinct parts. First was the Cotton Parade in which groups of girls—operatives of the Chadwick-Hoskins Co., of Charlotte, the Carlton Yarn Mills of Cherryville, and the Cannon Mill Co., Kannapolis—paraded down the runway dressed in their own cotton frocks. This plan, inaugurated by W. M. McLaurine, secretary of the American Cotton Manufacturers' Association, was to give the audience an idea of the type of girls through whose manual labor cotton goods are made possible. The Cotton Parade received great applause for these girls, chosen at random from behind their machines, were in appearance a credit to any community or social bracket.

The second part of the program, ably directed by Miss Catherine Cleveland of the Cotton-Textile Institute, fea-

Copy of Alix "Smoke" dress, of black organdie over white with circular skirt trimmed with multicolored velvet bows

Style Show at Charlotte's Carolina Cotton Festival on April 12 shows bride, flower girl and two bridesmaids in costumes similar to those modeled above

Play suit of navy and white printed pique consisting of shorts and bra with matching fitted jacket

Chambray for sports is a favorite—in gray it is used for skirt and in pink, wine and gray stripes for the shirt

Novelty leno in navy for skirt and same fabric printed in nasturtium and navy for jacket comprise this town or travel dress

Courtesy Cotton-Textile Institute

tured 40 or more high-fashion models worn by Charlotte socialites. This array ranged from beach-wear, sports, town and afternoon, evening wear, to the grand finale of the bridal scene.

Definitely illustrating the trend toward the return of the bell-shaped skirt was the bridal gown which measured 35 yd. around the bottom. As the bride stepped down the runway the orchestra played the Lohengrin wedding march, but the cotton textile manufacturers in the audience viewing the width of this skirt thought they detected a slight under-current theme song of "Happy Days Are Here Again."

A dress for garden parties is this "lily of the valley" gown of white cotton lace trimmed with horse hair

Another group at the style show given under auspices of Cotton Textile Institute and American Cotton Manufacturers' Association at Charlotte, April 12

Knitters Meet in Philadelphia

Show week featured by three gatherings

MANY vital problems facing the hosiery and underwear industries were analyzed and acted upon during Knit Goods Week in Philadelphia. Meetings included three major events—the annual conventions of the hosiery and underwear industries, and a hosiery trade practice conference under auspices of Federal Trade Commission.

Hosiery's Strong Position

HOSIERY shipments in recent years have risen steadily and substantially in spite of adverse economic conditions generally; the National Association of Hosiery Manufacturers now enjoys the largest membership and support in its history. These two facts, highlights of the year in the hosiery industry, combined to lend a definitely optimistic color to the 34th annual convention of the National Association of Hosiery Manufacturers, held April 26, at the Commercial Museum, Philadelphia.

The importance of the program, which included discussion of the trade practice rules to be submitted the following day at a hearing of the Federal Trade Commission, and action on proposed functional changes in the association, drew an unusually large attendance at the convention session. Under the gavel of Wm. H. Gosch, as president, the convention disposed rapidly of many major matters. The meeting approved of a change in by-laws by which the post of president, usually held by a manufacturer, was made a salaried office, under direction of a chairman and two vice-chairmen, the last three being manufacturers.

At a directors' meeting following the convention, Austin H. Carr, president of Durham (N. C.) Hosiery Mills, was elected chairman of the board, and Roy E. Tilles, president Gotham Silk Hosiery Co., New York, and R. O. Huffman, Morganton (N. C.) Full-Fashioned Hosiery Co. were elected vice-chairmen. In further accord with the new set-up, the board elected Earl Constantine, formerly managing director, as president, while Rueben C. Ball, assistant managing director, was named to the newly created post of secretary. Ernest Blood, of John Blood & Co., Philadelphia, was re-elected treasurer.

Features of the convention proper were the president's report by Mr. Gosch and the managing director's report by Mr. Constantine. Mr. Gosch touched briefly on developments since the depression, devoting himself for the most part to analysis of current problems and their possible solution. He commended the industry for the effort made to keep production in line with sales. "Manufacturers are becoming sales-minded," he added, and he said that this, plus the association's progress in "planning ahead" tends toward better business in the immediate future.

The president's address was significant in that it marked his last appearance in that role after three years' service. Following a word of valedictory by Mr. Gosch, Mr. Constantine took the floor and paid a glowing tribute to the services of the departing president. On behalf of the board, Mr. Constantine then presented Mr. Gosch with a framed enscrolled resolution adopted by the board, and also with a silver platter, suitably engraved.

Mr. Constantine's own address built up to an impressive picture of the hosiery industry's progress. In 1935 shipments were 8% over 1934, while in 1936 they were 10% over 1935; in 1937, despite a sharp drop in the second half, reflecting conditions generally, the year ended 3% above 1936. Shipments for the first quarter of 1938 were 11% ahead of 1936, he added—explaining that 1936 was taken as the barometer because 1937 was "a highly abnormal year". He outlined the year's activities of the association in many directions, including legislation, tariffs, the silk boycott, full-fashioned hosiery standards and cost accounting. Concluding, he said the hosiery industry conferences, which had proved very successful, would be continued with another in the fall.

The statement of the raw silk committee was mainly a report of progress. It described the studies now being made of 12 lots of silk sent here by the Japanese Government.

Hosiery Rules Favored

REGULATIONS for the accurate labelling of hosiery as to fiber content were provided for in a code of rules formally approved by the hosiery industry at a trade practice conference, April 27, at Commercial Museum, Philadelphia. The conference was under the auspices of the Federal Trade Commission, and was presided over by Henry I. Miller, assistant director, Trade Practice Conference Division of the commission.

The rules were first submitted, as originally drafted by the trade practice committee of the hosiery industry, but discussion during the meeting brought up differences of opinion on many of the provisions. After much debate, suggestions for amendments were accepted by Mr. Miller on behalf of the commission.

Earl Constantine, newly elected president of the National Association of Hosiery Manufacturers, opened proceedings on behalf of the industry by reading the original text. In a preliminary comment, he pointed out that the session had a pioneer significance inasmuch as hearings on textile identification to date had concentrated on "vertical action by fiber" and the present hearing concerned itself with "horizontal action by a product made of various fibers".

The rules, all of "group one" type, meaning compulsory not voluntary compliance, had 11 divisions.

Rule 1 made it unfair trade practice to market hosiery without full disclosure of the material content; Rule 2 provided that use of name of manufacturing process or trade-mark always must be accompanied with specification of material content; Rule 3 covered use of descriptive terms such as "chiffon," "crepe," etc., permitting these words to be used only in conjunction with fiber content; Rule 4 prohibited deceptive or misleading use of type or arrangement of fiber description; Rule 5, which provoked much discussion, covered such matters as labelling of irregulars, imported or exported hosiery, invoices (no fiber descriptions on invoices were required), weighted hosiery, envelope packed hosiery, clocks, decorations, etc., average sizes, special rules for bundle goods, etc.; Rules 7, 8 and 9, respectively, prohibited misbranding, substitution, and falsely claiming to be a manufacturer or producer.

Sentiment of the conference

Earl Constantine, elected president, N.A.H.M.

Austin H. Carr, elected chairman, N.A.H.M.

Ralph M. Jones, president Underwear Institute

Roy A. Cheney, managing director, U.I.

strongly supported the aim to establish clean-cut rules to eliminate any falsity or ambiguity in labelling of hosiery as to fiber content. The provision in Rule 1 by which the largest fiber constituent in hosiery would be named first and the other fibers second or third in accord with their percentage, won general endorsement.

Criticism of the rules came mainly from the other manufacturing and distributing fields. Among the chief speakers were Dean Hill, president of the Mercerizers Association, who pointed out that the rules as now formulated did not protect the consumer in case ordinary cotton yarn might be substituted for mercerized yarn; R. D. Hall, of the Southern Combed Yarn Spinners Association, who made a parallel point as regards combed cotton merchandise; Irvin C. Fox, counsel for the National Retail Dry Goods Association, who asked various clarifications on behalf of the retail trade; Ephraim Freedman, director of Bureau of Standards, R. H. Macy & Co., who likewise requested many changes and additions, stressing the need for definitions of full-fashioned, seamless, cut and sewn, and lisle hosiery.

At the conclusion of the discussion, it was announced that all interested parties would have 15 days in which to submit briefs to the commission.

Sift Underwear Problems

LABOR legislation, economic trends, and the need for sounder price policy within the industry—these were the chief topics occupying the attention of underwear manufacturers at the annual convention of the Underwear Institute, held April 28, at the Commercial Museum, Philadelphia. Wages and hours proved a paramount issue at the meeting. Touched upon in both the reports of Ralph M. Jones, as president, and of Roy A. Cheney, as managing director, it was also a topic of spirited discussion from the floor, and after adjournment of the convention, the same topic was analyzed by Congressman Robert Rampseck addressing the members at their annual convention luncheon.

Discussion at the convention, while indicating a sharp diversity of opinion on what type of hours-and-wages legislation should be passed, made it clear that the members favored the principle of having some legal curb in that respect. Finally, a resolution was adopted criticizing the wages-and-hours bill now before the House, but expressing sympathy with the broad principle as such. The Institute also went on record as opposed to the Borah-O'Mahoney bill for interstate commerce regulation and opposed to any processing tax on cotton or rayon or their products.

A stern note of caution dominated the annual report of Mr. Jones. Emphasizing the point that "to offer goods below cost is unethical" he urged the manufacturers to be more wary as regards speculative buying by customers and to avoid stock accumulations. He reviewed the business outlook generally, strongly urged repeal of both the undistributed profits tax and the capital gains and losses tax, and concluded his report with a tribute to the work done by the Underwear Institute and its permanent staff. Roy A. Cheney, managing director, was called suddenly to Belden, S.C., by the death of his wife, and his annual report was read by Edward J. MacMillan, president of Standard Knitting Mills and former president of the Institute. On motion of Mr. MacMillan the institute sent a telegram to Mr. Cheney extending the members' sympathy to him in his bereavement.

The managing director's report had three main phases—national legislative trends, plans for a trade practice conference on fiber identification in underwear, and the numerous research projects completed by the Institute during the year. Discussing the national outlook, Mr. Cheney said he could foresee an increasing tendency for price control by the Federal Government, citing its recent dealings with the public utilities. He pointed out that the cost accounting inquiry to be made next year by the Government had been anticipated in the earlier work of the Institute's distribution costs committee; and made known that the Institute is collecting factual data on jobbers' and retailers' underwear stocks, on the principle that with such data at hand, the problem of congestion in distributors' hands could be more satisfactorily handled.

Discussing agricultural programs and the processing tax, Lawrence Myers, chief, marketing section Agricultural Adjustment Administration, said "the floor tax was unfortunate" and it was not likely future processing taxes would include a floor tax. The underwear industry's statistical position was clearly summarized by Francis E. Simmons, assistant director in charge of research.

A vigorous criticism of manufacturers who invite costly strikes by failing to act on workers' just complaints was voiced John D. Strain, Institute labor counsellor.

In his luncheon address Congressman Rampseck defended the principle of wages-and-hours legislation, but opposed the present bill.

The institute reelected Mr. Jones as president, W. W. Moyer, of Moyer Underwear Mill, Ephrata, Pa., as second vice-president, and O. W. Gridley, Utica (N.Y.) Knitting Co., as treasurer. G. C. Good of Globe Knitting Works, Grand Rapids, Mich., succeeded B. C. Russell of Russell Mfg. Co., Alexander City, Ala., as first vice-president.

Philadelphia Show

Replete with new developments of interest to knitters, throwsters, and dyers

MILL men attending the 34th Knitting Arts Exhibition held April 25 to 29, in Philadelphia, showed keen interest in the wide variety of new equipment displayed by a record-breaking number of exhibitors. At many booths the crowds were gathered three to four deep throughout the week, intent on the latest developments in machinery used in knitting and related operations. Thus, among the knitting machines which attracted greatest attention were three distinct types of full-fashioned hosiery machines, a true-rib self-topping half-hose machine, a spring-needle machine making backed fabrics, an underwear machine for producing elastic girdles, a double-jacquard links-and-links machine, a high-speed tricot machine, and a so-called knitting loom.

Examples of equipment, aside from knitting machines, of particular interest to large numbers of visitors at the show included two types of improved machines for doubling, twisting, and coning in one operation; an improved cone winder; and a new hosiery dyeing machine. Sharing the interest shown in the machines mentioned above were several other types of knitting, throwing, dyeing, and finishing machines, etc. Features of the new and improved machines brought out during the last twelve months are given below.

Outerwear and Underwear

Among the numerous types of new outerwear equipment displayed was a 14-in., six-cut, high-speed plain baby shaker machine for knitting men's and boy's jacquard design sweaters of worsted plated over cotton in individual sizes; and capable of knitting a 2x2 rib bottom on the cylinder needles, then transferring automatically to the dial needles to knit jersey. Cuts or complete sweaters, in both half-cardigan and double tuck stitch, can be knit on a three-needle rack latch-needle machine; this machine has three-color striping and special draw-thread attachments, and a concealed head. For knitting heavy backed fabrics a spring-needle machine was equipped with overhead drive, refined take-up adjustments, and rollers on the feet, and had a brake attached to the driveshaft to prevent back-lash, and yarn racks contained under the machine. One manufacturer exhibited a 7-in. two-feed automatic rib toque machine having a revolving cutter for controlling a multiple number of ends by pulling the ends away from the needles. The same company showed a 30-in. 12-feed rotary jacquard with short chain system for easy control of feeds. Also shown, were an automatic individually controlled feed striped jersey machine, with cutters and clamps for the elimination of waste on each of its 32 feeds; and an 18-in. machine with 24 pattern wheels. A machine with four pattern wheels knits elastic backed bathing-suit material with irregular pattern effects. For knitting bathing suit straps and similar articles, there was shown a new circular machine making ¾-in. tubing.

Among the flat machines shown were a links-and-links automatic machine and a hand machine with double jacquard and two sets of jacks, with individual needle control for producing distinctly pronounced designs, the former was built with stop motion and motor attached. A full automatic double-lock links-and-links-machine was equipped with a jacquard operating on four rows of selectors to effect absolute individual control. Racking is automatic over twelve needles and selective from one to eight needles; i.e., any number of needles up to 8 can be racked in one operation either to the right or left. New also was a high-speed tricot machine having a normal operating speed of 360 to 400 r.p.m., and producing from 9 to 10 lb. of single-bar fabric per hour from 100-denier rayon; a feature of this machine is that it takes sectional warp beams up to 14 in. in diameter.

Particularly interesting among the underwear machines exhibited was a machine for knitting elastic girdle material with selvage edge, and having an auxiliary laying-in attachment for knitting-in an extra end of elastic to produce a heavier, stronger, and more durable fabric.

Hosiery Machinery

Notable developments in half-hose machines were a true-rib self-topping

General view of Knitting

machine with a reverse plating attachment, and a double sole trimmer which trims the sole while the stocking is being knit, in the following manner: as each course in the sole portion of the foot is knit, the yarn is clipped and held by the trimmer acting as an extra lever, then knit in the next course. Jacquard machines for knitting children's hose, the first to be built in this country, were shown, along with the new imported jacquard rib machine for children's hose. To simplify changing of striped patterns a jacquard machine has been equipped with a chain striping control. An improvement on circular machines was a chain type striper with special control for changing two facing or backing yarns at the same time. Also shown was a coarse-gage machine with chain striper and seven fingers provided with individual yarn clamp and cutter.

Among improved small ribbers was an automatic selvage welt striping machine with a cutter between the cylinder and dial, which operates for two stitches during the process of knitting the selvage welt. Shown for the first time was an improved coarse-gage automatic looper.

One manufacturer exhibited a so-called knitting loom, features of which are its production of approximately 100 yd. of fabric per 8-hr. day, and the fact that it can produce a mesh as fine as $\frac{1}{10}$-in.; products of the machine include curtains, bedspreads, yard goods, collars, cuffs, scarfs, etc. There was displayed also a machine for knitting covering on wire at a rate of 1,500 ft. per hr.

Several manufacturers featured important improvements which have been made recently in full-fashioned hosiery machines. Two companies, for example, showed automatic welt-turning devices. One of these devices, which was described in detail in the January issue of TEXTILE WORLD, permits setting up of the initial courses and turning of the welts to be carried out without any particular skill or laborious effort on the part of the operator. The other welt turner is applied to single-unit machines and is said to produce a welt exactly the same in appearance as that turned by hand, the stitch being held on every needle. The manufacturer of the latter device also introduced an entirely new type of jacquard single-unit machine designed to produce open work and press patterns simultaneously.

Another development featured was a new method for producing single-unit stockings without looping; in this method the leg and foot are knit on one machine, the insertion of the lower heel being carried out on a separate machine—called a high-speed heeler.

Two innovations in the single-head, single-unit type of machine were a new model for producing men's full-fashioned half hose and the incorporation of a lace welt attachment on the model for women's hosiery.

A new attachment for full-fashioned machines consists of a drum type friction, by means of which friction is concentrated in one place, thereby allowing the machine to run at full speed during all operations.

Yarn Machinery

The manufacturers of a combination doubler-twister-coner introduced a little over a year ago have improved the machine by narrowing it, thus effecting a saving in space, and by changing to a circular belt drive, said to give more efficient power transmission and at the same time to consume less power. Another manufacturer exhibited a new twister, among the features of which are included an improved spindle-swing assembly and twist driving unit, and a sliding motor drive with an improved belt tension device. In the same booth was displayed an improved double-twister; this machine also is equipped with a sliding motor drive, has a mechanism which makes easy reversal of twist, and is so arranged that changes in twist are made by changing only one gear.

In another exhibit was shown a double-twister in which faller wires are made of specially treated, long-wearing wire; the machine has a new, adjustable traverse motion and a more rugged brake. The same manufacurer displayed a double-deck twister which has an improved spindle-swing assembly and a ratchet-controlled movable motor, arranged to move in only one direction—backward—to compensate for any belt slackness; and a new double-deck winder, on which gear-controlled speed changes of as little as 10% are possible; the machine has a V-belt drive; and heart-shaped cams, designed to insure production of perfect-traverse bobbins.

Several improvements have been made in the cone-winding machinery exhibited in another booth: among these are an adjustable guide cover which eliminates play from the guides, and assures more evenly dense and straighter-surfaced cones; and an improved cone-size knock-off motion.

An important improvement in a high-speed cotton cone winder of the grooved-traverse-roll type is a quick setting, precision, non-binding slub-catcher with a tamper-proof adjustment; the slub catcher is so designed as to give permanent and uniform settings on all feeds. On another cone winder there has been incorporated a precision cleaner similar in principle to the slub catcher mentioned above and an improved differential pressure adjuster for use in winding silk; Oilite bushings on the idler pulley,

Arts Exhibition, Philadelphia

camshaft, and spindles; and a new slow-acting brake which works on the driving pulley.

Three new swifts were presented by another manufacturer: (1) an expandable rayon cake swift, arranged to deliver the yarn over-end; (2) a swift designed for handling Lastex yarns; and (3) a swift having a flexibility of expansion which makes it suitable for any skein length.

Shown for the first time was a new staple fiber cutter which cuts rayon, wool, silk, etc., into lengths ranging from ¼ to 6 in.

Finishing Equipment

Of particular interest to hosiery dyers was a new rotary type dyeing machine with a floating cylinder designed to give easy penetration of the liquor from the center of the machine, as well as other points, and to allow the hosiery to float freely and rise in the liquor without danger of tangling or chafing. Supplementing the package dyeing machine which it first announced a year ago, one manufacturer introduced a package-forming press, an individual-package extractor, and a sample dyeing machine which is so designed that results obtained with it are duplicated exactly with machines for production work.

Exhibited for the first time was a changeable-contour hosiery drying form, with which any one of several outlines can be secured by application and/or detachment of side pieces. Another innovation in automatic hosiery drying equipment was a circular rotating table having in an upright position around its edge twelve or eighteen electrically heated or steam-heated drying forms.

A well-known manufacturer of hosiery dyeing, extracting, and silk soaking equipment introduced a folding machine for pillow cases, napkins, towels, diapers, etc.; the machine folds, stacks, counts, and separates into lots; it is quickly adjustable to different types and widths of folds; capacity is 1,200 doz. pieces in 8-hr.

Of interest to dyers of hosiery and other knit goods were two color-matching lamps; one of these utilizes carbon dioxide to reproduce north-sky daylight; the other employs Mazda lamps in conjunction with Corning Daylite filters and a special diffusing frame to reproduce natural daylight as regards both color and diffusion. For testing the fastness to light of dyed textiles, a new type of fading lamp was exhibited.

Latest developments in textile chemicals included a compound for saponifying acetates, materials for delustering hosiery and rendering it water-repellent in one operation, a finishing agent for imparting increased strength and elasticity to hosiery, a chemical for producing a silky feel on rayon underwear, and a new line of throwsters' tints.

Sewing Machines

One sewing machine manufacturer exhibited a new high-speed machine for use in hemming lightweight underwear fabrics; a feature of the machine is that it makes hems the stitches of which do not come through to the right side of the garment. The same manufacturer showed a machine with a special control lever by means of which it is possible to increase the depth of bite when the machine is going over elastic bands, thereby eliminating the possibility of stitches pulling out of the elastic portion.

Another manufacturer of sewing equipment exhibited a machine which produces a scalloped hem on garments such as slips; the machine is likewise capable of adding a row of lace to the garment in the same operation. This manufacturer also displayed an underwear seaming machine which does away with the necessity of pinking the fabric prior to sewing. Other features of the same exhibit were high-speed, automatically oiled machines for closing tubular fabrics; a button sewer with which it is said to be possible to attach any kind of button, a three-needle machine for attaching elastics to knee-length hosiery, and a 4,000-stitch-per-minute seam coverer.

A machine which produces buttonholes parallel to the bands of sweaters, blouses, dresses, etc., was featured by another manufacturer, who also had on exhibition a round-eyelet machine producing any size eyelet.

Three new machines demonstrated by another manufacturer were (1) a wide-gage flatlock machine, which does seaming and cover-seaming in one operation, for attaching elastic material to athletic shorts and other garments and for attaching bands to the bottoms of sweat shirts, etc.; (2) a machine for attaching split tubing to lingerie; and (3) a hemstitching machine suitable for use on flat- or warp-knit fabrics.

Also shown was an adjustable guide assembly for attaching elastic to knitted undergarments; and an automatic belt-loop machine.

Accessory Equipment

Three manufacturers displayed electric knitting-machine stop-motions: one featured the fact that cones or bobbins can be run entirely out, and that the device will cause the machine to stop if any slubs or large knots are present in the yarn. Another exhibit featured the facts that, once the yarn is placed over the prongs of the upper stop motion it threads itself through the feeler; and that the contact point of the revolving ring of the stop motion is automatically cleaned. The third exhibitor displayed several types of protectors: one, attachable without drilling, eliminates the necessity of using a threading stick, since the detector prongs are placed on a frame within easy reach of the knitter. Other stop motions exhibited in the same booth included a needle protector, which stops the machine if a bunch-up occurs; a needle detector which causes the machine to knock off whenever it comes in contact with bent or broken needles; and a press-off protector which stops the machines when a press-off occurs.

Two exhibitors displayed improved machines for mending silk hosiery; another showed a machine for tying bolts of cloth—a feature of the machine is that the space between the two ties, which are made simultaneously, is adjustable from 5 to 20 in. Another exhibitor displayed a printed fabric label which, by heat and pressure, can be automatically and irremovably attached to garments. A manufacturer of lighting equipment showed redesigned units in which 350-watt lamps have the same light output as older 450-watt models; other changes in design permit instantaneous starting, horizontal hanging, and more easily accessible voltage-change plugs. In the same booth was an exhibit of fluorescent light, used in making visible identifying marks—invisible in ordinary light—used by laundries, hosiery manufacturers, and the like; this light is said also to make visible some oil stains and starch marks which are invisible under ordinary illumination. One manufacturer of knitting machines displayed a portable machine for testing fabric wearing qualities.

An improved velvet-surface cone, which eliminates soft noses and keeps primary windings in shape, was shown by one manufacturer, as well as a cone especially developed for use with the new combination doubling-twisting-coning machines; a new-type cotton-spinning top-roll cot made of an oil-resistant synthetic material; a new type of removable cloth roll for woolen and worsted looms, lap-winder cores, and other similar uses; an improved package-dyeing tube; and a more uniform and smoother pressed-paper base for single-head spools.

A manufacturer of bobbins exhibited new sizes for large-package silk and rayon throwing machinery. Another manufacturer displayed a Bakelite shell for use on loom take-up rolls, measuring rolls, and the like; and a Bakelite molded poteye, for use in finishing plants.

Congress Tackles Wages-Hours

Washington news summarized

From* TEXTILE WORLD'S *Washington office

WASHINGTON has provided its share of front page news during the last month.

Follows a survey of developments of most direct influence on the textile industry:

Wage-Hour Bill — Wages-hours legislation, throttled the second time by Southern Democrats and Republicans in the House Rules Committee, is again much alive. House Labor Committee Chairman Mary Norton surprised many by announcing a second petition to release the bill from Rules. On May 6 it got its 218 signatures in less than three hours, probably because numerous Democrats who helped defeat President Roosevelt's reorganization program want to make amends against Fall elections. In the House it seems the bill will almost certainly pass. A group of Republicans is supporting wages-hours in the hope it would stop the hegira of industry Southward. (This bill carries no regional differential, as did that passed by the Senate last year.) If the House passes the bill it will face a new fight in the Senate, perhaps a filibuster. This major New Deal ambition, strongly supported by the President, may delay adjournment. But both sides would soon want to leave Potomac heat for home fence fixing.

RFC Loans—RFC's $1,500,000,000, authorized by the Glass amendment for industrial loans, will be available, of course, to textiles equally with other industries. Whether the Corporation will relax collateral requirements far below the commercial bank levels remains to be seen. It certainly will induce commercial banks to dust off the welcome mat a bit. Washington opinion is that a measure of prosperity will have to come before business will commit itself to obligations for expansion. But if an upturn comes first the Government money might create epochal activity. The textile industry has been a large banking customer of RFC. Of RFC's total $100,000,000 industrial loans since its inception, nearly $19,000,000 was taken by 214 weaving, knitting, dyeing and finishing concerns.

Senate Looks at Cotton—Now for the seventh time the American Cotton Cooperative Association has been investigated by a congressional committee. Charges are that the Association has underclassed large quantities of cotton, and that it operates for benefit of its executives rather than for its members. Witnesses who testified before the Senate Agriculture Committee to that effect were discredited by still others. One Government expert said that regrading by the Bureau of Agricultural Economics shows a variance of less than one point from ACCA. Washington cotton authorities say that if ACCA executives get large salaries they probably earn them. But they are tired of this perennial, unless both sides show determination to strip down to the bone.

Converters' Silver Jubilee

Hears call for broadened cooperation

PAST, present and future of the textile industry were discussed from various angles by industry leaders at the 25th anniversary dinner of the Textile Fabrics Association, held April 25, at New Yorker Hotel, New York. This body, originally known as the Converters' Association, was organized in 1913, by a handful of companies. More than 200 converters attended the silver jubilee event.

A strong plea for cooperation between the print cloth group and the converters in exchange of data on stocks, shipments, etc., to help toward stabilization, was made by Dr. Claudius T. Murchison, president of the Cotton-Textile Institute. Dr. Murchison pointed out that if the converters would meet the print cloth group half-way in the pooling of such statistics, this would facilitate the task of getting cutters, wholesalers, etc., to cooperate. He stressed the value of the broad project of keeping all divisions enlightened as to what happens to goods when they leave the mill.

W. P. Fickett

In his annual report, W. P. Fickett, president of the association, built a dramatic picture of the history of the body since it was first formed; then he turned to current problems which called for action. He strongly endorsed the association's recent adoption of the 8-group plan and urged that each of these groups hold monthly meetings. He reviewed the achievements of the association in maintaining fair trade practice rules, and he advised current use of its protective clauses in sales contracts on processing tax and wages-and-hours legislation. Discussing the fiber identification movement, he warned industry that, while identification itself is logical, the consumer bodies should not be permitted to tell sellers how to manufacture their goods. Concluding, he said that, "after 25 years, the association stands as the authoritative point of contact with the cotton converting industry."

Henry G. F. Lauten of Prince Lauten Corp., a foremost cotton converter and a veteran in the association, another speaker, recalled the unselfish devotion of the many able men who had worked for the welfare of the industry and he urged that non-members who profit by the work of the association, should join it and strengthen it. He deplored the inactivity of the Joint Steering Committee and suggested that it be converted into a market committee.

Other speakers included Howard Veit, of M. Lowenstein & Sons Co., and S. C. Lamport, of Lamport Manufacturers Supply Co.

Federation Expansion

On rayon side indicated an annual meeting

G. H. Conze reelected president

WIDENING of the scope of the National Federation of Textiles to give more attention to rayon industry problems was implied in several ways at the Federation's annual meeting, held April 19, at the Empire State Club, New York. The tendency of the Federation toward representing rayon was a highlight of the gathering, which brought together some 50 manufacturers, a representative cross-section of the silk-and-rayon textile industry.

Three points were outstanding: (1) G. H. Conze, of Susquehanna Silk Mills, president, spoke of an impending increase in membership, which was taken to mean that a number of leading rayon weavers will join the Federation shortly, following the lead of Burlington Mills and J. P. Stevens & Co., which are already members; (2) M. K. Yorks, president, Bloomsburg Silk Mill, which makes chiefly rayon fabrics, was elected vice-president to succeed Walter Stunzi, of W. Stunzi Sons Silk Co., which makes chiefly silk fabrics; and (3) the annual report emphasized the recent joint activity by the Federation and a group of rayon manufacturers toward improving trade practices in the manufacturer-converter relationship.

Following the precedent set last year, the meeting was in the form of a luncheon session. Mr. Conze presided and gave a brief talk, devoting himself chiefly to directing attention of members to the annual report, copies of which were distributed at the meeting.

The report of Irene L. Blunt, as secretary, opened with a general review of the association's operations through the year just closed. A few highlights of the year, as culled from the report, were: nearly 30,000 designs registered; out of 164 cases filed for arbitration, 91 were withdrawn before an award was rendered; 3,000 rayon underwear garments are now being tested to determine wearability and results will be known in four to six months, this being the first of a series of such tests.

M. K. Yorks elected vice-president

During the meeting, the following were elected to the board of directors: Edward F. Addiss, Burlington Corp.; G. H. Conze, Susquehanna Silk Mills; Ward Cheney, Cheney Brothers; Jarvis Cromwell, Wm. Iselin & Co., Inc.; Otto Froelicher, Schwarzenbach Huber Co.; W. H. Hubbard, Wm. Skinner & Sons; William Menke, Menke, Kaufmann Co., Inc.; Henry E. Stehli, Stehli & Co., Inc.; A. D. Walker, A. D. Walker & Co.; M. K. Yorks of Bloomsburg Silk Mill. With the exception of Mr. Yorks, all officers were reelected, including Mr. Conze as president, A. A. Clune, treasurer, and Miss Blunt, secretary.

Style Show Held at Textile School of N. C. State College

Styles covering the range of feminine garments from boudoir to bridal altar were displayed before an audience of 1,000 persons during a two-hour parade of 136 attractive young models who came from eleven North Carolina girls' colleges to compete in the eleventh annual Style Show conducted by the Textile School at North Carolina State College on April 21. Above is the group of first prize winners with grand prize winner holding flowers. All the costumes exhibited were designed and made by college students as a part of their regular classroom work in home economics. Fabrics for the garments were designed and woven by students in the State College Textile School. Grand prize for the best costume was awarded to Miss Alma Lee Becton of Stantonsburg, a student at Louisburg College. Her costume consisted of a long beach coat, short fitted jacket and slacks, and a halter and shorts. Guests at the show were welcomed by Clyde H. Hoey, Governor of the State, Frank P. Graham, President of the University of N. C., and John W. Harrelson, administrative dean. Thomas Nelson, dean of the Textile School, presided. In the audience were the heads of every textile school in the nation and high officials of the Textile Foundation, on route to their semi-annual meeting at Southern Pines.

Silk Weaving Problems

Solution of difficulties when changing from plains to fancies depends on re-education in all departments

By S. C. VENEY

CURRENTLY, many mills that are unable to compete any longer in the plain goods market are being forced to change over to fancy fabrics. However, such changes introduce many new problems. Immediately a greater working force is required, due to the inexperience of employees. Possibly some out-of-town men will have to be imported; although certain inducements may have to be offered, this may prove to be less expensive than to double the old force and start a school.

Mills making such a changeover should employ a designer. Patterns may be received complete in every detail with harness draft and pattern chain; nevertheless, it will be found that an experienced designer can greatly assist both operatives and executives, and may prevent some costly mistakes. He may also develop some new ideas and such originality will prove a worth-while asset to any mill.

Fancy draws require careful calculation preliminary to harness building. The proper number of heddles on each shaft must be ascertained, the figure being controlled by the reed count and the repeat of the harness draft. For instance, in a reversed single-point entry the first and last harnesses may require only half as many heddles as the other shafts. As a matter of fact, the number of different combinations is almost limitless and the whole secret is to have a proper analysis and calculation of each one used. Correct numbering of harnesses is also of great importance. Most mills call the one nearest the warp beam or farthest from the reed "number one." Whatever arrangement of numbering is used must, naturally, be followed through all departments.

Drawing-In Department

The drawing-in department may require entire rebuilding. If the mill has been running nothing but staples, there may have been very little, if any, drawing-in done. If possible, operatives should be taught to read harness drafts from the original layouts, since the fewer copies that have to be made the smaller is the possibility of error. To assist drawers-in, warpers should try to run sections containing a number of ends which is a multiple of the harness repeat. This may at times be difficult or impossible. In such cases it may, however, be feasible to make the repeat come out even with alternate sections. At any rate, there is always a certain number which will be found to break even with a certain end in the harness repeat. The reason for arranging sections in this manner is that it will give the drawers-in a continuous check, as the last end of each warp section will always fall on the same harness.

Loomfixing Problems

Loomfixing offers the next problem. The men may never have run more than a small number of harnesses, and to see patterns employing 19 or more shafts may prove confusing to them. It therefore becomes practically imperative to employ an experienced loomfixer. There is no better combination than a good loomfixer and a good designer who work hand in hand. If looms are properly fixed, weaves can be checked without doubt as to whether marks which may appear in the cloth are mispicks due to faulty setting of the machine or to mistakes in the pattern chain.

Dobby looms are bound to give more trouble than Gem or Intermediate heads. This is due to the fact that the latter two have a more positive harness motion. With dobby looms it is well to tear down the whole head and clean every part thoroughly. The hook knives may have to be resharpened. The hook back-support probably will have to be ground smooth or replaced entirely. The pattern cylinder may be a pick late.

New Yarn Types

Mills going into fancies will undoubtedly use certain new yarns, both for warp and filling. Numerous different qualities and effects can also be produced by introducing specially thrown silk yarns. These may cause all kinds of troubles: for instance, shiners, broken picks, loops, etc. In such cases it takes a great deal of patience and experimenting to ascertain the proper tension, both in weaving and quilling, at which these yarns will perform faultlessly.

The weavers themselves will have to be taught how to run fancy weaves. The greatest difficulty will probably be the finding of the right pick, with proper drawing-in of broken warp ends a close second. It is good policy to have a spare hand or examiner check each loom daily, harness for harness, for wrong draws. Sometimes it is advisable to attach a copy of the drawing-in draft to the front harness and explain what it is all about. It has also been recommended that the drop wires be placed on the electrodes in a pattern corresponding to the entry of the warp in the harness. Of course it would take considerably longer for a person to drop-wire an intricate pattern on six electrodes, but this idea would, without doubt, be of great help to a weaver when two or more ends break out of the harness, especially when the drawing-in is so irregular as to be confusing.

It is all more or less a matter of what the weavers are used to and what their mental capacity is. Some mills have woven hundreds of thousands of yards of intricate weaves and never worried about wrong draws and probably never had them, while other mills may start the first warp and have everybody so confused that nobody can pick out the beginning of a repeat.

Re-education Necessary

No matter how careful one is, there are bound to be mistakes. Changing from plain to fancy weaves is a task of teaching and learning in all departments, and the first few weeks may be anything but encouraging. Success, of course, depends in no small degree upon the type of operatives. Some will become discouraged and quit. Again, the fault may lie with the management, which may be expecting too much.

It will probably be many months before mills changing from plains to fancies will operate on an efficient basis. Operations such as drawing-in warps and starting up looms may easily cost three or more times as much as before; hence, former piecework rates will have to be discarded and new rates established.

What Speed Doffer?

New rule gives cotton carders correct answer for any staple length

By JAMES DUGELBY

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In the past there has been no generally accepted rule for determining the correct doffer speed to be employed when carding cotton of various staple lengths. As a result of many years of experience in the textile industry and extensive tests on various types of cotton, Mr. Dugelby has evolved what he calls a "practical-experience constant" for use in calculating the doffer speed which gives best results on any given length of staple. Very little has been written on the subject of doffer speed, and we shall, therefore, welcome comments from our readers either on the rule proposed in the following article or on other methods which they have found satisfactory.

EVERYONE recognizes the fact that good carding is a prerequisite to good yarn. Although many authorities on cotton carding have stipulated cylinder speeds for different staple lengths, few have broached the subject of doffer speed. Certainly, in the past, there has existed no practical rule by which doffer speed can be determined according to length of staple to be processed. This is partly because the matter generally has been left, and quite rightly, to the superintendent's judgment. However, it often happens that when a mill changes over from one staple length to another or opens, say, an Egyptian section, where previously only American cotton has been processed, even the superintendent scratches his head over the doffer speed that he should use in the new organization. This does not insinuate any incompetence, but the fact remains that any departure from established standards naturally entails some brow-puckering.

As a result of several years' experience and extensive tests, the writer has found that a definite relation exists between staple length and draft between doffer and cylinder. This relation can be expressed as a constant ratio between staple and draft. Regardless of the type of cotton to be processed or the numbers of yarn to be spun, use of this constant in the calculations seems to produce the best carding obtainable, from the standpoint of quality and quantity combined.

Cylinder Speeds

The constant was determined from a series of observations made over a period of years. Regarding the cylinder speeds, after several tests, it was concluded that the speeds stipulated by different authorities were correct, and a table of suitable cylinder speeds for different staple lengths was drawn up in accordance with accepted principles. Then it was determined by practical tests what doffer speeds produced not only the best results, but also the most economical working conditions.

Tests were made on 15/16-in., 1-in., 11/16-in., 1⅛-in., and 13/16-in. American cotton, and on 1⅜-in. Egyptian cotton for making 8s to 80s carded and combed yarns. These tests allowed plenty of variety of data upon which to base results. Before making these tests, from observations made in Europe, the writer had ascertained that the most appropriate doffer speed for 17/16-in. Egyptian cotton for 150s mule-spun yarn was 8 r.p.m. on a 24-in. doffer. Also, carding of even longer staples had been observed, and, invariably, a corresponding reduction in doffer speed was made. Starting with a reasonably low doffer speed, the speed was gradually increased by increasing the doffer change-gear, tooth by tooth, until a decrease in quality was apparent. Then reverting to a lower speed, further critical observations were made, until the speed producing the best results was determined.

After several tests had been made in this manner on different staple lengths, a list of suitable doffer speeds varying inversely with the staple length was prepared. This indicated that perhaps the length of staple could be taken into account, in order to determine the doffer speeds. The draft between doffer and cylinder was determined, for each staple length. Then it was noticed that the ratio between the determined draft and their corresponding staple lengths was approximately constant, throughout the entire range of staple lengths. For this reason, the ratio is referred to as a "practical-experience constant."

The following procedure will serve as a guide for determination of doffer speeds to be used for different staple lengths. The practical-experience constant is the starting point from which all suitable doffer speeds, based on staple length, must be determined. If staple length ÷ cylinder to doffer draft = constant, then staple length ÷ constant = draft.

Also this draft can be expressed by the following formula: (diameter of cylinder in inches × diameter of lickerin pulley driven from cylinder × diameter of doffer pulley × large doffer gear) ÷ (diameter of cylinder pulley driving lickerin × diameter of lickerin pulley driving doffer × doffer change gear × diameter of doffer in inches) = draft.

Ordinarily, since doffer change-gear is the factor to be determined, it is omitted from the formula, which is then expressed as the draft constant; i.e., (diameter of cylinder in inches × diameter of lickerin pulley driven from cylinder × diameter of doffer pulley × large doffer gear) ÷ (diameter of cylinder pulley driving lickerin × diameter of lickerin pulley driving doffer × diameter of doffer in inches) = draft constant. Draft constant ÷ draft = doffer change-gear.

Doffer speed in r.p.m. can be calculated as follows:

(Cylinder speed in r.p.m. × diameter of cylinder pulley driving lickerin × diameter of lickerin pulley driving doffer × doffer change-gear) ÷ (diameter of lickerin pulley driven from cylinder × diameter of doffer pulley × large doffer gear) = doffer speed in r.p.m.

Combining the steps and eliminating those terms which appear an equal number of times in both the numerator and denominator, the speed can be derived through the single expression:

(Diameter of cylinder in inches × constant × speed of cylinder in r.p.m.) ÷ (diameter of doffer in inches × staple length) = speed of doffer in r.p.m.

For a numerical example of this procedure, assume Whitin cards with a 50.75-in. cylinder making 165 r.p.m., and 27.75-in. doffer, and pulleys and gears as indicated; and on which it is desired to process 1⅛-in. cotton. By use of the true numerical value of the practical-experience constant, 0.036, draft would be determined as follows:

$1.125 \div .036 = 31.25$.

The draft constant would be determined as follows:

$(50.75 \times 7 \times 15.5 \times 192) \div (18 \times 4 \times 27.75) = 529$.

Then, $529 \div 31.25 =$ 17-tooth doffer change-gear.

Doffer speed would be determined as follows:

$(165 \times 18 \times 4 \times 17) \div (7 \times 15.5 \times 192) = 9.69$ r.p.m.

Or by use of the expression for combined steps, the doffer speed can be figured directly as follows:

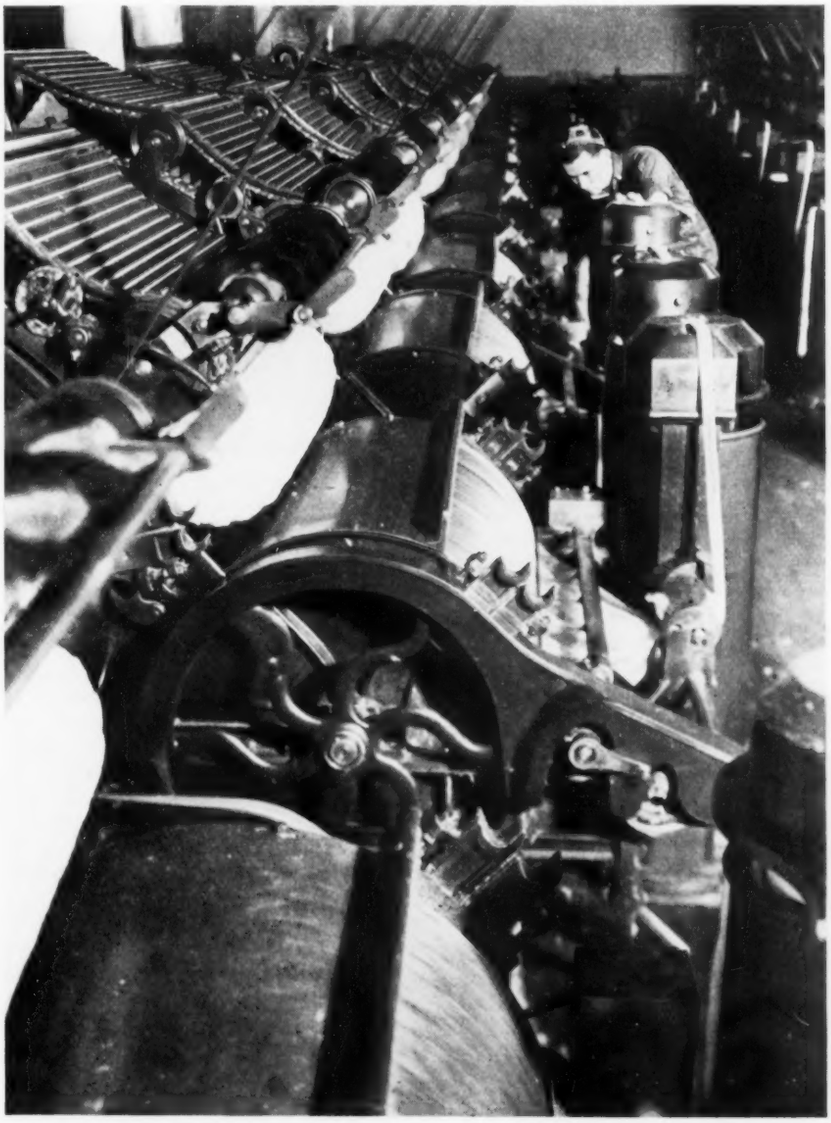
$(50.75 \times .036 \times 165) \div (27.75 \times 1.125) = 9.69$ r.p.m.

This speed is equivalent to 10.86 r.p.m. for a 24-in. doffer.

Of course, there is nothing rigid or unyielding about the results obtained by application of the above rule; nevertheless, gears and speeds determined by its application are sound bases, from which any necessary adjustments may be made.

Table of Suitable Speeds for Cylinder and Doffer

	Revolutions per minute			
Length of staple	*50in.Cylinder*	*24in.Doffer*	*26in.Doffer*	*27in.Doffer*
13/16 in.	180	16.41	15.18	14.64
7/8 in.	177	14.98	13.86	13.36
15/16 in.	174	13.75	12.72	12.26
1 in.	171	12.67	11.72	11.30
1 1/16 in.	168	11.71	10.84	10.45
1 1/8 in.	165	10.86	10.05	9.69
1 3/16 in.	163	10.17	9.41	9.07
1 1/4 in.	161	9.54	8.83	8.51
1 5/16 in.	159	8.97	8.30	8.00
1 3/8 in.	158	8.51	7.87	7.59
1 7/16 in.	157	8.09	7.48	7.22
1 1/2 in.	156	7.70	7.13	6.87



Extensive tests show that definite relation exists between staple length and doffer speed necessary to give best results

Modifications of Rule

Certain factors besides staple length will have to be taken into consideration when definitely determining doffer speed after having applied the rule. One of the factors is the ability of the cards to supply the necessary quantity of stock for the subsequent machines. Occasionally it will be found necessary to increase the doffer speed beyond that calculated. Otherwise the next process would consume more stock than the cards possibly could produce. Frequently, this adjustment can be made by altering card draft, or by feeding a heavier lap.

In other instances, it will be found advisable to reduce doffer speed below the figure calculated, in order that card production will not exceed the requirements of subsequent processes. Again, it may be reduced for the purpose of obtaining a better-quality carded web. However, it will be found inadvisable to increase doffer speeds unduly beyond those calculated, because the method of calculation is set up so as to give the maximum doffer speed for good quality work.

In the accompanying table are listed the appropriate speeds for a 50-in. cylinder and 24-in., 26-in., and 27-in. doffers, corresponding to different staple lengths ranging from 13/16-in. to 1½-in. The diameters of cylinder and doffer as shown in the table have reference to diameter on the iron, whereas the diameters used in the calculations are diameters on the wire. The cylinder speeds were selected upon recommendations made by the machinery manufacturer or from an equally reliable source; and the corresponding doffer speeds were calculated by the method discussed.

Aridye Printing

Emerges from experimental stage; leading printers explore its possibilities

About a year ago the trade began to hear rumors of an entirely new method of textile printing. As the months passed the rumblings became louder and louder. Now the first chapter can be written in the story of what may well prove to be the most important development in textile printing since the introduction of vat and naphthol colors and their derivatives.

WITHIN the last few weeks a process of textile printing using entirely new materials has emerged definitely from the experimental stage. This method—the Aridye process—makes use of several new series of colors which differ materially from those with which the textile man is now familiar. Although these compounds, called the Aridye colors, are applied on ordinary roller printing machines and yield prints of outstanding fastness to light and washing, they have no "affinity" for any of the textile fibers in the usual sense of the word, the bond between the coloring matter and the fibers being effected by mechanical or physical anchorage.

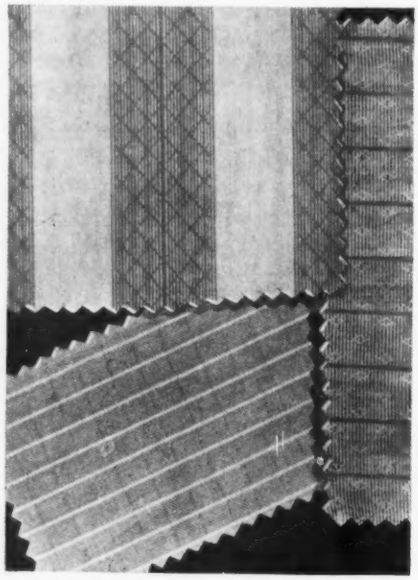
Essentially, the Aridye colors consist of insoluble pigments of fine particle size uniformly dispersed in a vehicle in the form of a thin paste in which are incorporated carefully selected water-soluble binders. When the Aridyes are applied to a fabric and the solvent is driven off, there is an entanglement of color particles by the fibers. The fixing of the particles to the fibers is aided by the binders. The result is, apparently, a coating of the individual fibers with color particles.

The Aridye process was originally discovered more or less by accident. That is, during the course of research on the improvement of inks used in color printing on paper, the Research Laboratories of Interchemical Corporation developed a new series of compounds which were found to be suitable for producing colored designs on textiles. A subsidiary, the Aridye Corporation, was formed to handle their manufacture and sales. The aid of several of the leading printers — including Pacific Mills, Cranston Print Works, United Piece Dye Works, and Waldrich Co. — was enlisted in carrying out practical mill trials on various types of fabrics before the new process was made generally available to the industry.

Various Types Available

Aridye colors are now manufactured in a variety of formulations for several types of applications. The descriptions that follow are concerned chiefly with Aridye printing on shirting.

The Aridyes are available in a wide range of colors, including a complete line of standard shirting shades. As regards fastness to light and washing, Aridye prints are said to equal the best vat prints. It is stated, for example, that some shades withstand 300 Fade-Ometer hours without fading and are brighter after fifteen washings than when first printed. In light and medium shades fastness to crocking is satisfactory; but with some dark shades crocking has not yet been wholly eliminated. An important characteristic of the Aridyes is that they give a uniform coloration on all fibers and fiber mixtures. In fact, it is possible to print such materials as fabrics made from fibrous glass.

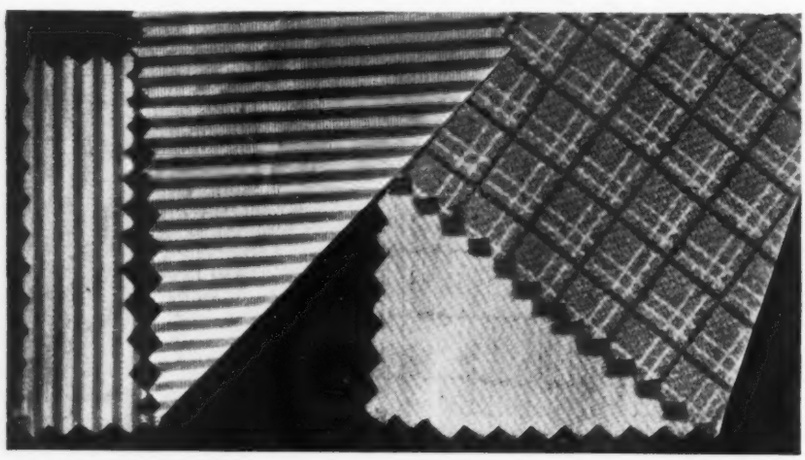


Group of cotton shirtings

One of the advantages of the Aridye process is its simplicity. Preparation of the color for the printing machine consists merely of mixing the Aridye pastes needed to give the desired shade and adding a "clear" if a lighter shade is required than that produced by the straight Aridyes. The clear is a white resin compound miscible in any proportions with the Aridyes.

Printing takes place on a roller printing machine, after which the goods are dried and then are cured by subjecting them momentarily to an elevated temperature. This is carried out in an air dryer, on a tenter frame, or with other suitable equipment. No further aftertreatment, such as steaming, ageing, washing, and drying, is necessary.

As Aridye prints in the final colors,

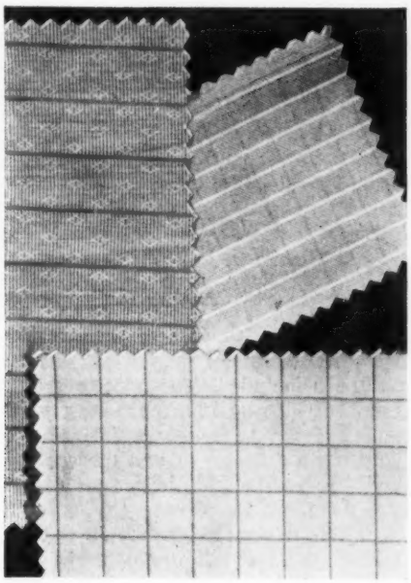


Through-and-Through Aridye printing, in contrast with non-penetrating Aridye effect

the time for taking patches is reduced, and any streaks or imperfections are immediately visible to the printer. Elimination of ageing automatically eliminates shading and other difficulties which are encountered in this operation. There is no tailing off and, therefore, Aridyes are particularly successful on fine stripes.

The composition of the colors can be varied during manufacture to give the degree of penetration desired. Thus, for imitating woven designs, a series of so-called Through-and-Through Aridye colors is now in the experimental stage.

In addition to the savings made possible by the simplification of the color preparation and the elimination of the aftertreating process, further economies are effected by use of shal-



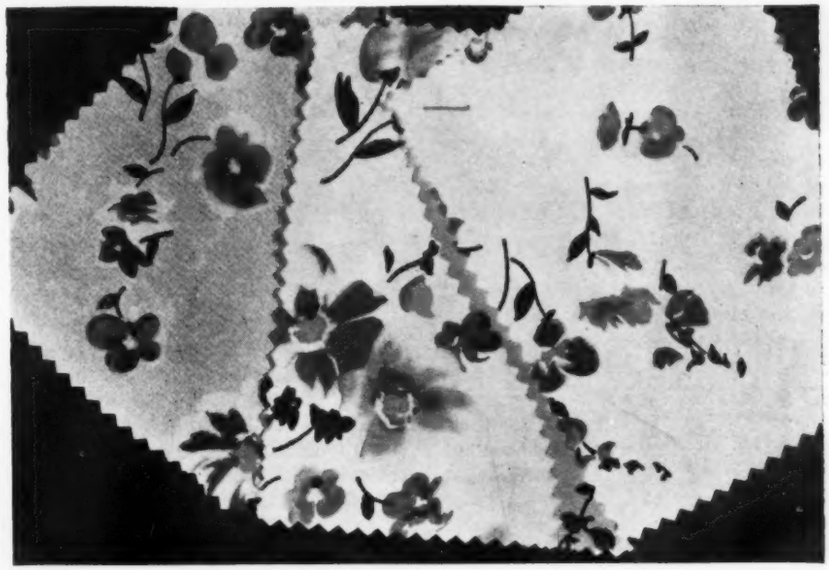
printed with Aridye colors

lower engravings and less pressure on the rollers. Aridye removed from the color box can be saved for future use. It is believed that the speed of the printing machines can be increased considerably, but as yet there has been little attempt to do this.

One of the important properties of the Aridye colors is that they do not spread and, therefore, yield exceptionally clear prints, with better tonal gradations and less bleeding into white grounds. This is especially noticeable on shirting patterns having fine lines.

In the case of acetate fabrics, presaponification of the goods is unnecessary, and, consequently, the strength of the fabric is not impaired.

One objection which printers have raised in regard to the use of Aridye is that the evaporation of the solvent during drying of the goods gives rise to somewhat disagreeable odors. It appears that this objection can be overcome by installation over the dry



Aridye prints on pure dye silk, French rayon crepe and delustered acetate

cans of a hood equipped with a suitable exhaust fan. Incidentally, both the solvent and the fumes are said to be non-explosive and non-toxic; the colors themselves are not flammable. A minor complaint is that it is rather difficult to clean up the machine after a run is completed. Actually, however, this is not very troublesome, provided the proper type of cleaner is employed. One precaution that should be taken in printing is to use a wooden furnisher, as the solvent contained in Aridye paste is injurious to rubber.

Certain Limitations

While the Aridye process appears to have some very definite advantages, it also has certain limitations in its present formulations. In the first place, the Aridye colors are in general more expensive than are acid, basic, and naphthol colors, for example; and from the standpoint of price many Aridyes correspond most nearly to the vat colors. In the second place, the process has yet to be extended to the production of over-all designs—particularly on silk and rayon dress goods, where even the present slight build-up of the hand is considered undesirable. In the third place, the Aridye colors as now constituted do not lend themselves to the production of discharge effects on dyed grounds.

It was stated earlier that the Aridye process has emerged from the experimental stage. This does not mean, however, that Aridye has reached its final stage of perfection. On the contrary, the manufacturers are constantly seeking to improve the colors and their methods of application. Within the last month considerable progress has been made in eliminating crocking. It is known that certain of the machine companies are working on new types of printing machines designed especially for facilitating the application of Aridye colors.

While there is no doubt that the Aridye process has a place in the textile printing industry, the process is too new for either the manufacturers of Aridye or the few printers who have had experience with these colors to know just what are their potentialities.

At present cotton fabrics comprise over 85% of the total yardage of printed textiles. Hence it is logical to assume that at the start the Aridyes will find their largest application in printing of cottons. Another promising field, although considerably smaller, is in the printing of silks and rayons, and particularly the acetates. There is a natural tendency to look at the Aridyes and the vat colors as being competitive, since they are more or less comparable from the standpoint of fastness properties and costs; but the extent to which the new process will replace vat printing is problematical. It would not be surprising, in fact, if in the long run the Aridye colors find their widest use, not as substitutes for the older classes of dyes, but in entirely new applications. That is, the ability of the Aridye colors to give a uniform coloration on all fibers and to produce new and unusual color effects may lead to the greatly increased use of prints, not only on cottons and rayons, but on woolens, worsteds, and the variety of fabrics composed in whole or part of rayon staple or other synthetics which are now coming to the fore.

What the next chapter in the story of the Aridye process will disclose is anybody's guess. It is certain, however, that this development is one of major importance to the textile printing industry.

Wool Staple Analysis

Accurate determination of raw material characteristics aids prediction of behavior during manufacture

By WM. O. HOLMES

AMONG THE questions of major importance to a mill concerning a given lot of wool top are: the length and amount of short fibers; the length and amount of longest fibers; the length and amount of the majority of fibers; the amount of coarse fibers; the thickness and evenness of the majority of fibers; and the spinning quality of the lot (staple character). Research into these questions, and records of the findings, will prove of inestimable value to spinner, weaver, finisher, and fabricator alike; and no progressive mill management will be without such aid once these findings and their diagrams have been interpreted in practical terms, and their tremendous value in predicting the behavior of individual lots of wool and in gaging manufacturing processes has been discovered.

In order to obtain the desired data, a length of 1½ yd. of a representative sample of the top to be investigated is analyzed in the laboratory. It is imperative that all laboratory testing be done under uniform conditions, preferably at 65% r.h. and 70° F., in order to exclude any variations. Wool fibers are subject to considerable physical change under varying temperatures and humidity conditions, and corrections of results of tests made under other than standard conditions are extremely complicated.

Coarse Fibers Removed

After all coarse fibers have been removed and counted, the top is graded in the various lengths of its component fibers, in groups, with a separate group for each ½-in. variation in fiber length. This may be accomplished by use of the Schulumberger machine, a machine developed by Alfred Suter (see TEXTILE WORLD, August, 1937 issue), or by an apparatus devised by the writer of this article.

As an illustration of the method pursued, a sample of Texas wool shall be followed through the laboratory to the completed record in the files. The longest fibers in this top are found to be 5½ in. in length. Then follow groups of 5 in., 4½ in., etc., down to 1½ in. The various lengths are set down in Column 1, Table I. Next, the weight in grains of each group is recorded in Column 2, opposite the length in inches. The third column lists the amount of fibers in each group, in per cent. To simplify graphical presentation of the quantity of each length of fiber present in the top, in column 4 each group is reduced to a common basis of 1 in. length. These figures are obtained by multiplying length (Col. 1) by per cent (Col. 3). Thus, the figures in Column 4 represent blocks 1 in. thick, with a cross-sectional area of the proportions indicated by the various figures listed. If the amount of the longest fibers is found to be less than 1%, these fibers are not considered separately anywhere after the second column, but are added to the next shorter fiber.

Since the various fiber contents of the top are to be charted in square blocks 1 in. deep, depicting their volume, Column 4 is reduced to its square root, and the results are set down in Column 5. To facilitate charting on a convenient scale, the figures in Column 5 are assumed to represent inches and are reduced to ⅛ of their value and changed to millimeters. The reduced values are recorded in Column 6, and are now ready to be made into the diagram shown in Fig. 1.

The millimeter length of the axis of the diagram equals the sum of Column 6, and the individual group of fibers are marked off in millimeters along the axis, and also on ordinates extending from the proper marks.

While the fiber contents are theoretically recorded in squares, it has been found that for practical use it is sufficient to link the ends of the ordinates by a continuous line as has been done in Fig. 2, thereby forming a cigar-shaped diagram. If this is done, the last ordinate at the end may be of the same size as the first one at the beginning of the axis. The length of fibers in each section is marked in the corresponding area, and the amount of coarse fibers taken from the top represented by a shaded area along the axis, in a width of 1 millimeter for each 100 fibers. (In actual practice, it will probably be found desirable to fill in such areas with a colored pencil; red, for instance).

Staple Character

The diagram itself will be complete when the values for staple character have been included. The total of Column 4, divided by 100, represents the median length of the staple, in inches (3.19 in. in this case); and the same sum divided by the length of the longest fibers, in inches, (319.3 ÷ 5.5 = 58) designates the staple character (58%). This latter value is of great importance to the spinner, as it permits prediction of the spinning properties of the top; a staple character of 60% having been found most satisfactory for fine- and medium-count yarns. This norm of 60%, how-

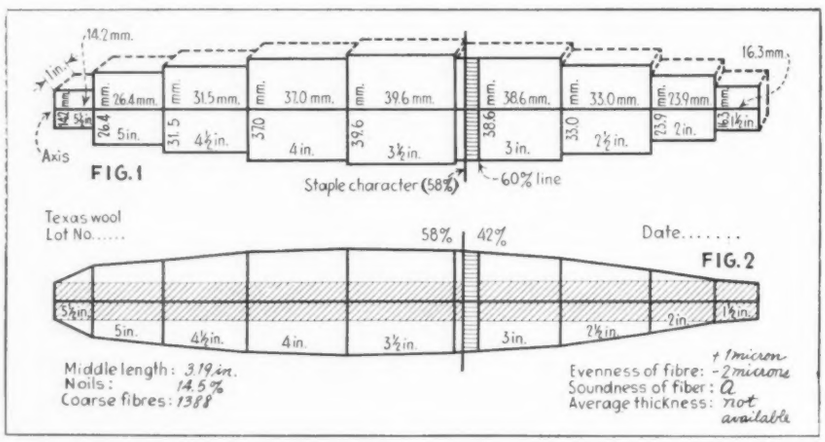


Fig. 1.—Preliminary diagram showing proportionate amounts of various length fibers in wool top. Fig. 2.—Completed diagram, including data shown in Fig. 1 and other factors concerning staple characteristics of wool top

ever, may vary with individual experience and opinion.

The 60% line is placed in the diagram at a point 60% of the distance from the left- to the right-hand side of the diagram, and the line representing the staple character of the lot under test is added in the proper place, extending somewhat beyond the diagram for easier identification. It will be found helpful to fill in the space between the 60% line and the actual staple-character line with red to indicate a value below 60%, and with blue for a value above 60%.

In its finished state, the diagram now records the quantity of each length of fiber present in the top, in relation to the total quantity; the amount of coarse fibers present; and the staple character. To complete the record we now list the average length of fiber contents; the amount of noils, in per cent; the evenness and soundness of the fibers in longitudinal view, the plus or minus variation in microns; and—if some method of measuring has been found practical or agreed upon—the average thickness of the majority of fibers, also expressed in microns. The question of thickness will be dealt with more in detail later in the article.

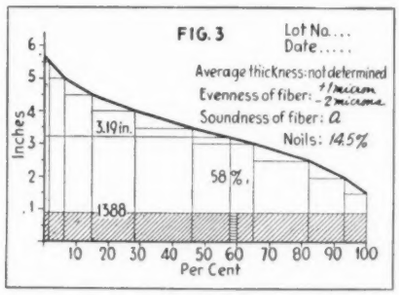


Fig. 3.—Data in Fig. 2 made into diagram of the type used by British cotton spinners

For comparison, the staple diagram of the wool under scrutiny is also presented in Fig. 3, in the method employed by British cotton spinners. The diagram in Fig. 3 is self-explanatory: as in Fig. 2, the ends of the single ordinates of the individual fiber groups have ben linked by a continuous line, and the number of coarse fibers is represented at the bottom by a shaded portion of a width of 1 millimeter per 100 fibers.

It is obvious that the volume of the longest as well as of the shortest fibers of the top, in relation to the entire volume of fibers, is not quite so clearly pictured in Fig. 3 as it is in Fig. 2, although the area as such is the same in either. However, the increasing recognition of the advantages of graphic charts, together with the popular conception that a graphic chart should consist of an abscissa representing one value (per cent in Fig. 3) and an ordinate representing another (inches in Fig. 3), and that the subject to be charted should be represented by a curve, may ultimately decide in favor of this latter method.

Measurement of Fiber Thickness

While it is known that the spinning properties of wool fibers depend to some degree on their thickness, it has to be admitted that no accurate method for measuring the thickness has so far been developed. Whatever has been or is being done is at best a compromise. In view of the fact that wool fibers only in extraordinary cases possess circular contours in the cross section, it is obviously an erroneous method of expression to speak of wool fiber "diameter," when, in fact, oval contours are the general rule, and pronounced bean shapes and ribbon-like ellipses are observed quite often.

For preparing specimens for microscopic measurement of fiber thickness, many will favor the cork method because of its simplicity, inexpensiveness, speed, and the ease with which the slices of cork with their fiber charges may be kept for future reference. When one is using this method, the fibers are pulled through a cork by means of a silk loop previously inserted. The specimen is sliced from the cork with a sharp razor blade, and the slice contains embedded in it fibers which present a clean cut for examination under the microscope.

However, a decided disadvantage of this method is that the fibers cannot be sliced sufficiently thin. The microtome, as improved by J. I. Hardy, permits the slicing of a group of fibers inserted in it to a thinness of but 3 microns (0.0001 in. or 0.003 mm.), and specimens prepared with its aid may also be filed readily.

For commercial routine work, a simple test consuming less time may be found entirely sufficient—the measuring of width. For this test the necessary equipment consists only of two razor blades which are clamped tightly together. The fibers to be examined are held securely on a board of soft wood or on cardboard, and simply cut in two, at a right angle to the fibers, with the clamped razor blades. The specimens to be examined will be found between the two cutting edges, and may be examined on a slide under a coverglass. A drop of water on the slide will effect even dispersion and complete separation of the fibers. 150 to 200 fibers are measured with a micrometer rule under high magnification, and the results averaged. If the specimens are cut from a top slightly twisted by hand, reasonably comprehensive data of the variations in width of the top examined will be obtained.

Because of the shortcomings inherent in the method of determining the thickness of the wool fiber with the aid of the microscope, many favor the gravimetric method when the contour of the fiber is of no immediate consequence or is determined separately. The measurement of the width of an elliptical fiber in the cross-section under the microscope is always a matter of some uncertainty, inasmuch as either the major or minor axis or some intermediate value is obtained only at such point along the length of the fiber at which a cross-section has been prepared; in addition, this method disregards the average thickness. Quoting fiber thickness in terms of weight per unit length gives an exact measure of the average thickness of the entire measured length, a value independent of the shape of the individual measured fibers.

System Best for Finer Wools

For merino wools and finer cross-breds this method is quite satisfactory; but if employed for coarser wools which are kempy and highly medullated, it will have the disadvantage that these are credited with a greater fineness than they actually possess.

Shortcomings of the methods outlined in this article are clearly realized, while some may wish to include data on scaliness and krimp as factors of consequence, the scientific-minded will miss data on elasticity, plasticity, rigidity, durability, hygroscopic nature, and thermal conductivity.

It is, naturally, impossible comprehensively to cover the subject in so short an article. The aim has been, rather, to give consideration to most of the physical and dimensional properties which would be of interest to the practical mill man studying the wool fiber in the top.

Table I

Staple Length in Inches	Wt. of group in grains	Amount of fibers in each group %	Quantity on basis of unit length	Square root of preceding column	Data reduced and converted to mm.
5½	4	1.4	7.7	2.8	14.2
5	15	5.3	26.5	5.2	26.4
4½	24	8.6	38.7	6.2	31.5
4	37	13.2	52.8	7.3	37.0
3½	49	17.5	16.3	7.8	39.6
3	54	19.3	57.9	7.6	38.6
2½	47	16.8	42.0	6.5	33.0
2	31	11.1	22.2	4.7	23.9
1½	19	6.8	10.2	3.2	16.3
TOTAL	280	100.0	319.3	51.3	260.5

Table I—Data concerning wool staple characteristics collected for incorporation into diagrams shown in Figs. 1 and 2

Automatic Stokers

Textile industry can save $10,000,000 annually by modernizing firing equipment

By FRED MERISH

In a letter which accompanied the following article, Mr. Merish advised us that during the last year he made a survey of boiler plants in over 100 textile mills. Extending from the New England to the Southern States, the survey included woolen mills making blankets, cotton mills making sheeting and drills, yarn mills making mercerized combed yarn, hosiery mills, finishing plants, and various other types of textile establishments. Some of the plants were hand-fired, while others were stoker-fired. Maintenance in the plants visited ranged from very poor to excellent. Certain of the results of this survey are summarized below.

A SURVEY of the textile industry and analysis of various power plant reports indicates that the industry can save $10,000,000 annually, by use of more efficient firing equipment. Even though the boilers in approximately 75% of the plants inspected were hand-fired, the fact that a considerable number of mills have replaced hand-firing equipment with automatic stokers during the last year or two, signifies that the trend, definitely, is toward more efficient power plant methods. Mills in which these recent replacements had been made, reported direct savings in fuel costs of from 30 to 50%. The greater savings were realized by those mills wherein the replaced power plant equipment had been very old and inefficient.

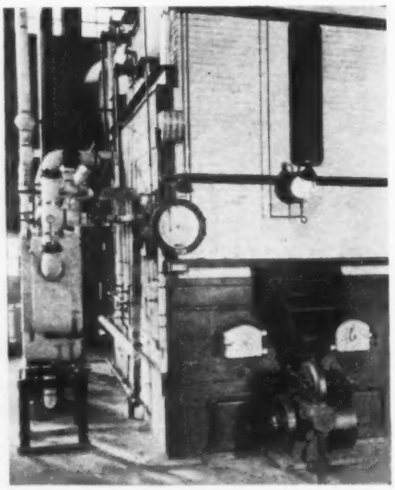
The survey also disclosed the fact that maintenance costs on automatic stokers are very low. Several mills reported having operated stokers for a number of years, without having incurred any major breakdowns in firing equipment, while one particular mill reported that it had used a stoker since 1923, which was still giving satisfactory service.

Quite naturally, it was found that in all mills having power-plant problems, these were more acute during the winter months, when more steam was in demand for heat, humidification, etc. However, even though irregularities were not nearly so noticeable during the summer months, the majority of mills making changes in power plant equipment advised that it really had been profitable to make them during the months from May to August inclusive, since there was less likelihood of disturbing production during that period. There seems to be no doubt that many difficulties due to firing methods may be corrected by automatic stokers.

Designs of Stokers

It was learned that fully 90% of stoker trouble is caused by use of sub-grade coal, or coal other than that for which the stoker was designed. There are stokers for every kind of coal and every type of boiler. Some stokers feed directly from the coal bins, while others feed from hoppers which have to be filled periodically. In one mill, there had been installed a down-slanting chute between the coal bunker and the stoker hopper, so that the hopper could be filled, simply by raising the hatch on the bunker, thereby eliminating the necessity of shoveling. Some stokers feed from below, others from above.

In some plants, the stokers are installed so that the moving parts are in or near the furnace; and in other plants, the stokers are installed so that the moving parts are at a considerable distance from the furnace, thereby necessitating the discharge of coal through a pipe. There are stokers designed for handling anthracite coal, and there are other stokers designed for handling bituminous coal. Frequently, the prevailing prices and the type of coal available are the deciding factors which influence the selection of stokers for a particular mill. Often, stokers for handling low-grade screenings are purchased because this type of fuel is reasonably stable in price and is readily available at all times. Before a stoker is purchased, a thorough survey of existing power plant conditions should be made by a competent engineer.



Overfeed stoker with nozzle-spray and air stream to fuel bed

All mills, in which stoker-firing had replaced hand-firing, reported that an immediate increase in operating efficiency and greater uniformity of temperature resulted. Many mills, after having installed automatic stokers, were able to operate with fewer boilers than when firing by hand. In some cases the number of boilers had been reduced from three to two, and in other cases the number had been reduced from two to one.

Most of the mills covered by the survey maintained an inspection schedule, usually monthly, for stokers; and plant engineers advised that stokers should be completely overhauled once each year. Some mills maintain service men on an annual fee basis, while others hire men for a certain consideration per job, for this type of work.

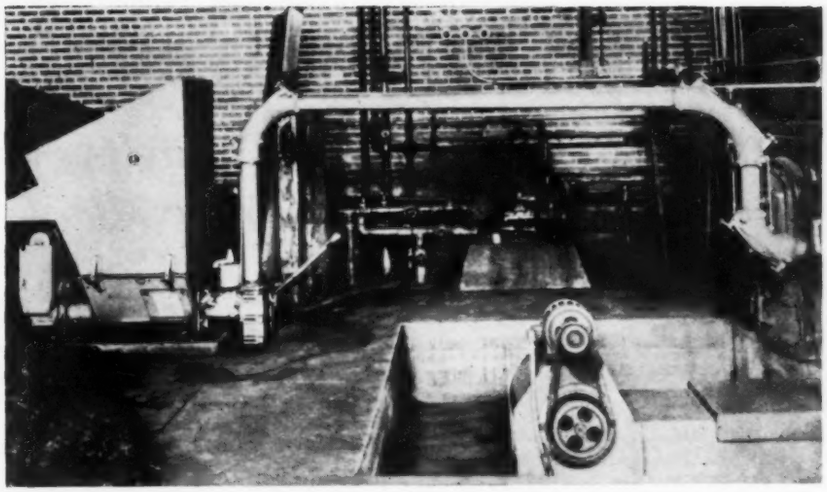
Stokers Effect Savings

Several mills reported that they had bought their stokers and were paying for them in installments. One mill engineer made the following statement: "Our two stokers really cost us nothing; we bought them on the installment plan and completed payment of the installments in a short time, out of the savings." Hence, it seems that possible savings on automatic coal stokers are sufficient to allow payment of all installations within a few months, provided that the consumption remains substantial.

In one case an automatic stoker was installed in a textile mill engaged in the manufacture of print cloths, to replace hand-firing of a 250-hp. boiler which furnished both heat and power.

After installation of the stoker, the overall efficiency of the boiler increased from 42% to 72%, while the cost per 1,000 lb. of steam decreased from 41 to 19c. Thus, boiler room labor costs were reduced during the first year, 1933 to 1934, from $10,400 to $5,500, which amounted to a saving of $4,900. That was a particularly bad year for this mill; yet a small profit of $3,500 was realized. But had hand-firing, with its annual expense of more than $10,000, still been in operation, the mill would have suffered a loss. Since 1934, profits have been more substantial, and, at the same time, savings on firing costs have increased steadily.

A hosiery mill reported that by the use of one stoker, a saving of $3,600 a year on fuel costs was effected. Another mill reported having reduced fuel costs to the extent of $3,100, which amounted to 43% of the original costs. One mill engineer showed records of coal purchases during the time when hand-firing was used and since automatic stokers had been installed. These records prove that this mill, which consumes 200 tons of coal per month, uses coal which costs 90c. a ton less than that used when firing by hand.



Underfeed stoker with individual blower and motor mounted on front

Comparative records of production, before and after installation of automatic firing equipment, were kept by a number of mills. These reflected a definite increase in labor efficiency after installation. An additional advantage is elimination of smoke nuisance. A number of mills had installed stokers to eliminate smoke nuisance and keep the goodwill of their communities. However, the majority of mills are installing stokers for modernization purposes.

Rayon Weaving Improved

Through longer heddles and proper copping

By C. STANLEY MARSHALL

TWO observations made recently by the writer in regard to rayon weaving relate to the length of the heddles and to the condition and type of the builder wheel on cop winders.

In the early days of rayon weaving it became apparent that the French or twisted wire heddles then common, particularly in silk weaving, were not suitable for weaving rayon. The soldered eye was inclined to catch the irregularities of the yarn and cause the ends to break. However, suitable heddles soon were made available in all standard lengths to fit the existing harness frames. Recently the question has arisen as to whether 11-in. heddles will weave just as well as longer ones, and whether any standard depth of harness should be used for rayon weaves requiring as many as 20 shafts.

Comparative production figures lead the writer to believe that harness frames of a depth sufficient to carry 13-in. heddles will produce at a better rate under nearly all conditions. The general mass flexibility of heddles and harness of this depth causes them to yield, and thereby control the ends in better balance than do the shorter lengths of heddles. With the shorter depth harnesses, a few heddles on the wrong side of the heddle hook are likely to produce harness marks in the cloth, since the heddles are rather rigid and tend to pull the warp threads.

It is customary on the narrower harness to have the heddle-bar hooks in line on all harnesses. When operating more than six shafts, due to the inflexibility of the shorter heddles, one encounters difficulty in drawing an end near the line of the heddle-bar hooks. This difficulty can be alleviated by staggering the hooks.

Recently, the effects of the builder wheel on the copping machines were traced in order to determine their relation, if any, to filling breakage. The fact was established that a nicked builder wheel will have a more definite weakening effect on crepe yarn than on plain yarn.

It can be ascertained, by a simple test, whether any filling weakness discovered on the loom or cop is attributable to copping. With the copping spindles turning 2,200 r.p.m., and the builder wheel traversing 440 times per min. on a five-wind traverse, the fact that the builder wheel always contacts the cop at exactly the same lateral line is generally overlooked. However, if a cop of weak yarn is found, and slowly wound at a tension from under the thumb and a pencil mark put at each weak place, the pencil marks will make a lateral line on the cop if the weakness is caused by copping.

These tests lead to good procedure to follow, such as rebuffing the builder wheels in small groups regularly, or after metal spools have been used, and especially if copping is done from iron or steel steaming bobbins.

The action of the builder wheel is so fast, and it comes in contact with the cop so many times (between 1,000 and 2,000) that when filling service to the looms is not so good as should be expected, it is wise to try slightly different types of builder wheels, especially when all other factors have been considered.

Also, builder wheels have an influence on sloughing, although not so much as has the picking motion. However, when by reason of their weight or holding springs, builder wheels are inclined to advance non-uniformly, they produce places where sloughing occurs, even on firmly wound cops.

$4,000 Saved Annually

By modernizing winding department at Valdese Mfg. Co.

CARDED-YARN mills with obsolete winding departments will find it interesting to study the experience of Valdese Mfg. Co., Valdese, N. C. There yarn quality has been improved and winding costs have been reduced by installation of nine new Universal No. 44 Roto-Coners replacing thirteen older machines. At the same time working conditions have been greatly improved and the employees are able to earn from 10 to 20% higher weekly wages.

The thirteen old machines were producing an average of 50,000 lb. of single carded yarns ranging from 12s to 30s. It was possible to wind a few thousand pounds more a week in an emergency, but this was not often done. The machines were built with 50 spindles to a side and operated at around 200 yd. per min. or slightly better. Each of the 26 operatives ran 50 spindles and earned $12 to $13 a week on a piece-work basis.

The nine new machines produce the same requirements of around 50,000 lb. a week. They are built with either 40 or 50 spindles per side, and one operative runs a side, as on the older machines. Speeds vary from 450 yd. per min .on dye tubes to 550 yd. per min. on regular cones. The work load per operative was worked out scientifically according to the size of bobbin, yarn number, ends down, and the like. And, despite an increased production of 30 to 50% a week, not a single one of the eighteen operatives on the new machines would like to return to the old equipment. Weekly wages on the new machines for the same number of hours of work range from $15 to $16.50, and it is possible for an operator to make $17 to $19 by exerting some extra effort.

Labor cost for winding has been reduced over 12% (or $4,000) annually, which means that the new machinery will pay for itself in a relatively short length of time. Quality has been improved, due to certain mechanical changes in the late model Roto-Coners. These improvements, in brief, include a double slub catcher which insures cleaner yarn; elimination of all reciprocating parts; and a rotating traverse with helical grooves which directs the thread on the cone and eliminates roll-cut yarn. Packages are more uniform and can be made any density desired. The winder is so constructed that moving parts are at a minimum and there is little wear even at high speeds. The master mechanic at Valdese reported that he has had no maintenance cost at all so far with the new machines. Also, it might be mentioned that noise in the winding room has been reduced to a point where the click of the hand knotters can be heard above the noise of all the machines in full operation.

The Valdese winding room is large and light, with sufficient spare floor for additional machinery when needed. Large windows and a monitor roof furnish natural daylight, which is supplemented by 24 new Cooper-Hewitt mercury-vapor lamps.

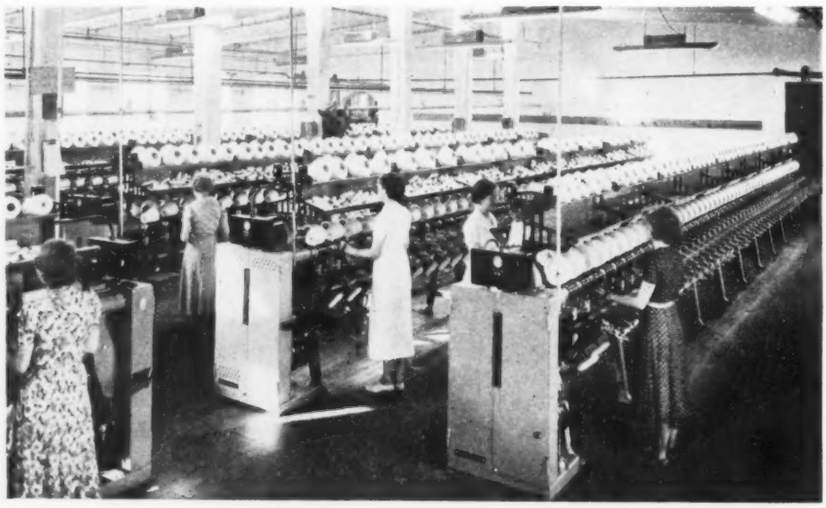
Spinning Rooms Revamped

The spinning rooms have also been revamped. In Mill No. 1, twelve new Whitin long-draft frames have been installed and ten frames of the same make were changed over to long draft. In Mill No. 2, there have been installed ten new Whitin frames; 24 were changed over.

No changes of any consequence have been made in the picker rooms since one-process picking was put in by this company several years ago.

Two vertical Gaston County kiers in the dyeing and bleaching plant have been reworked, and plans are to revamp the entire department. Larger pipes to give better circulation of dye liquors are being installed. The circulating systems of the two revamped kiers are operated by new 25-hp. Allis-Chalmers motors, and larger motors will eventually be installed in connection with the others. A new Gardner-Denver compressor with Torrington lubricating device was set up during the last year. It is powered with a 40-hp. G.E. motor and V-belt drive. New humidifier heads of the direct nozzle type have been put in recently throughout the mill, and a pumping and filter plant installed in the basement.

Valdese Mfg. Co. specializes in high-grade carded single yarns, and has operated full time on orders throughout the present recession. Modern manufacturing methods and sound management principles which were laid down by the late Francis Garrou, founder of the company, are carried on by the present staff. Officers are C. F. Spencer, president; A. F. Garrou, vice-president; E. M. Spencer, secretary and treasurer; L. P. Guigou, assistant secretary and treasurer; and Louis Bounous, superintendent.



View in winding room of Valdese Mfg. Co., showing part of recent installation of nine modern cone-winding machines which have replaced thirteen older machines; new lighting installation has also been made

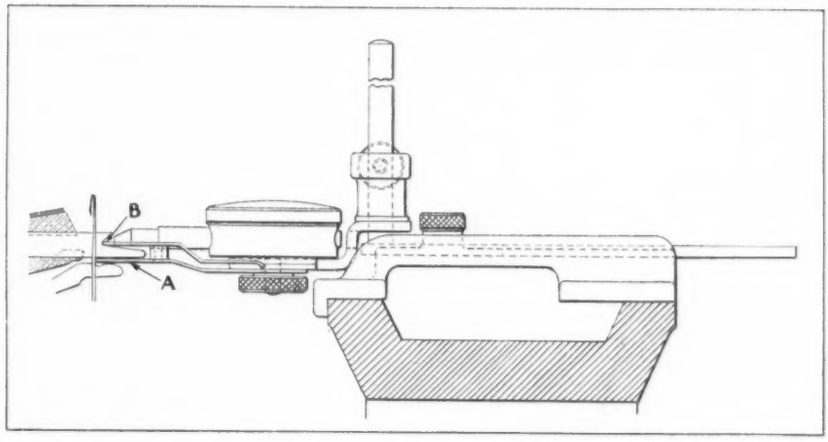
Stitch Gage

Permits accurate setting of jack-beds, slur-cocks, and verge-plates on full-fashioned machines

By WALTER A. SIMOND

THE FIXER on full-fashioned hosiery machines is faced with many variables when he attempts to set the stitch correctly to obtain a given length of stocking and the proper degree of flexibility in the finished fabric. The variables are as follows: cone winding, conditioning, cleanliness of the machines, tensions, falling rings, snappers, carriers, and silk diameters. All of these vary in some degree throughout the length of each machine. The relation between the needle position and the jack-beds, slur-cocks, and verge-plates must be correct if the best possible results are to be obtained. If two small plates are added to the horizontal gage described in the September, 1936, issue of TEXTILE WORLD, it is possible to obtain a high degree of accuracy in the setting of these three machine members last mentioned.

As shown in the accompanying diagrammatic sketch, the lower plate *A* is clamped under the knurled nut which fastens the dial gage to the gage foot. On its upper surface it has a small pillow block to support the floating measuring slide *B*. Stop plate *A* is 1½ in. wide on its contact edge to avoid any bending of the needle stems. The edge of plate *B* is 1 in. wide where it fits into the sinker throats. Plate *B* extends about 0.01 in. beyond plate *A* when mounted.



Stitch gage

Gage Setting

The stitch gage is first set with the machine in the yarn-drawing position; with both plates bearing against the backs of the needles, the lower plate *A* should clear the sinkers by a few thousandths of an inch. In this position the horizontal slide is locked and the dial turned to a zero reading and locked.

To obtain the exact distance the sinkers are projected beyond the backs of the needles for the body stitch of a stocking, the slur-cocks should be moved in to the centers of the heads; then the gage is placed opposite a slur-cock and moved in until the stop plate *A* comes in contact with the backs of the needles as shown in the sketch. The dial reading from zero is the required measurement. The horizontal holder slide should be clamped while the slur-cocks are being set; but this slide should be free while adjustments for stitch length are made.

At present, when we start up a new yarn, we set the stitch by trial and may need to change a few times before we have the correct number of courses per inch; then, when the set is completed, we check for total length and usually we must reset. Because of the many variables mentioned above, we are never sure that the heads are uniformly set. For example, if we happen to set the stitch on a head when the silk is running either a little fine or a little too heavy (it varies in each cone), it is not likely that we have the right length of stitch for the normal size of yarn. It is because of these variables that we are allowed an inch variation in leg length.

In realigning for more uniform lengths of stockings, the fixer sets the needles, and then the verge-plates are set by the horizontal dial gage; also, the jack-bed positions are corrected where needed. Next the stitch units are tested to make sure the needles do not move in the horizontal plane while the sinkers are being drawn. Then the slur-cock at the center of the first head is set to the thickness of a divider of the same gage as the machine. The divider is removed from the space between the verge-plate and sinkers, and the distance is measured as shown in the sketch. When the sinkers are moved up to the verge-plate from this position, the dial should show a movement equal to the thickness of the divider used as a gage. If the dial reads more, it indicates the amount the verge-plate is worn where the sinkers hammer the edge.

This clearance is very important. With too great clearance, we have uneven stitches and sinker lines, and a slowing down of the machine will shorten the stitch. The other slur-cocks may now be set to the stitch gage reading of the first head. Repeated tests have shown that only one setting will be required if the verge-plates are in proper condition. When a slur-cock is moved backward by the adjusting nut, the nut moves forward a few thousandths of an inch in its slot and the slur-cock needs to be pushed back as far as it will go; otherwise it may slip back later while the machine is knitting.

Aligning Jack-Beds

After a set has been knit with the new adjustment, each stocking should be tested by placing the first leg narrowings on a fine hook and then bringing the selvage edges together under equal tension to determine whether both sides of the fabric are of the same length. Usually, when the selvage edges are of uneven length, it is best to make a slight readjustment of the jack-bed position. Both ends of the jack-bed ought to be moved if the center of the head is set to the correct stitch length. In this way, the total length of the stocking will not change, since the jack-bed will then be moved slightly around.

its center in the horizontal plane.

These movements of the jack-beds can be easily made with the stitch gage, as with any given position of the needle bars, the sinkers must come through the needles as far at the ends of the heads as at the center. In measuring for the first move of a jack-bed, the slur-cock should be in front of the jack-bed adjusting screw. On the other end the position of the slur-cock is not so important, since the stitch gage should read the same all the way across the head when jack-bed is moved there.

On account of high-splice or ringless mechanisms there are usually two or three heads where the interference with the movement of the yarn or silk will require either that the needles must be moved in or the slur-cocks and verge-plates moved out slightly to obtain the required length of stitch. The stitch gage will show exactly what the variation is, and in subsequent changes a record may save time and avoid errors. When the verge-plates are worn, the stitch gage will give a more accurate setting of the plates than the use of a divider.

It is much easier to avoid dropping stitches in the narrowings when the lengths are uniform. Also, the needle breakage is less, because each stocking bears its own share of the fabric tension. The release of the fabric tension while narrowing may not fully compensate for the extra pull of a stocking which is much shorter than the others in a set. Neither will a long stocking knit as smoothly as those of the correct length, and tuck stitches may appear in such stockings with the knocking-over beds properly set. Short feet cause the heels to spread when boarded and, with uneven leg lengths, increase the cost of matching and spoil the appearance of the finished hosiery. With modern machines having two stitch units, it is a simple matter to mark the face of the stitch star wheels with a center punch if they do not bear calibration marks. Then, when the stitch gage shows a variation of stitch length between the two units, due to wear or misplacement, we can make such minor adjustments as are needed to keep the star wheels in like positions.

It is recommended that one head over each stitch unit be used when changing stitch lengths, and simple records of each style may be made as follows:

Style 642

Body	Splice	Heel & Sole	Slack Course
6 Thd.	5 Thd.	11 Thd.	Automatic
.053*	.062*	.080*	.097*

* Stitch-gage reading

From these records one can easily reset for duplicate orders at any time. With the stitch-forming members of both leggers and footers set to a mechanical exactness, we are assured of a more uniform product and fewer seconds due to mismatching at the footer transfer line.

Oversize Steam Mains

Increase heat losses and are seldom necessary

By JAMES O. G. GIBBONS

IN LAYING OUT steam piping for industrial plants, especially those which require a considerable amount of steam for process work, engineers often are inclined to make the sizes of the mains unnecessarily large. This not only increases the first cost, but causes excessive radiation losses, due to the large surface of the pipe.

In earlier days, when many boilers were installed for the purpose of supplying steam to low-speed reciprocating engines, no doubt large steam mains had a tendency to eliminate pulsations and to provide adequate steam during the very short periods when the cylinders were taking it. However, even in this case, it is probable that a receiver-separator of ample capacity would have adjusted conditions more satisfactorily.

Seemingly, there is a general impression that large steam mains will act as reservoirs from which steam can be taken to meet sudden demands, this however, for practical purposes, is not true.

At 100 lb. gage pressure 1 lb. of steam occupies almost exactly 4 cu. ft. Assuming that 1 boiler horsepower-hour is equivalent to 30 lb. of steam at this pressure, it would occupy about 120 cu.ft. or the equivalent of a 12-in. main slightly over 150 ft. long.

Even if it could be obtained when needed, 1 boiler horsepower-hour is not much reserve in an emergency. But as a matter of fact, it is not possible to get even a fraction of a horsepower without causing a pressure loss.

Suppose that a 10-lb. pressure loss were justified; then the pipe would be full of steam at 90-lb. pressure and about 0.017 lb. per cu.ft. less in weight. This, for 120 cu.ft., would amount to approximately 2 lb., which is all the reserve steam that could be obtained from the main with this pressure loss. Obviously, any serious consideration of the value of this amount of reserve steam would be ridiculous.

The same reasoning applies to a considerable degree, to large-drum boilers. The amount of steam actually contained in such boilers is not appreciable, and again, it could not be used without a pressure drop. No doubt, the general belief that a large steam space in a boiler will be of value in an emergency is due to the fact that if the boiler has a large water capacity, and a pressure loss is allowed, a considerable amount of water will flash into steam at the lower pressure. But as stated above, the actual value of this steam is not appreciable.

Seemingly, the advantage of large-drum boilers for process work is exaggerated. The water capacity of a horizontal return tubular boiler is, in many cases, not much greater than that of a water-tube boiler. Furthermore, the comparatively large amount of heat stored in a high brick setting often will be of more value in an emergency than a larger boiler drum. This is particularly true of a boiler that is fired with an oil burner capable of responding quickly to changes in load.

Often there is a tendency, when large amounts of steam are required for process work, for the operating departments to attempt to take steam at a greater rate than that at which the boiler can provide it. If the operating departments cannot get all the steam required, the blame will in many cases, be placed upon the inadequate size of the steam mains. If the boilers cannot keep up their pressure, it is reasonable to assume that they are not able to generate steam as fast as it is being used. Installation of larger mains would only aggravate matters and encourage the operating departments further to overload the boilers.

An important point to keep in mind is that small steam mains seldom cause failure to keep up adequate steam pressure. On the other hand, if pressure at the boiler is sufficient, while pressure at the service end is inadequate, it is likely that the fault is with the steam mains. However, this condition rarely occurs in practice.

Large-Package Throwing

Makes many economies possible; care needed in revamping and replacing machinery

By HENRY MIEDENDORP, JR.
Consulting Textile Engineer

BALANCED, large-package throwing, especially on single-end rayon crepe, is advantageous not only to throwing mills—reducing handling, making possible increases in spindle speeds and production, enabling checking of lots from operation to operation without weighing, and reducing the direct-labor cost of throwing—but is also advantageous to the throwsters' customers, because package-to-package and large-package throwing assures them of better workmanship, a minimum number of knots, and ability to check lot return by number of bobbins against number of skeins, as shown by invoices of producer and throwster.

Application of balanced-packages to throwing is not a new idea. Many progressive mills have practiced it for years, in so far as was possible, in the throwing of both silk and rayon. Balanced-package throwing is simply running skein-to-bobbin, and bobbin-to-bobbin in all succeeding operations. In addition to the advantages already mentioned, large-package throwing increases efficiency in operating, reduces amount of waste and number of necessary knots, and makes easy correct checking from one operation to another, due to the fact that if an operator has a certain number of skeins to wind, that number of full bobbins must be returned, and so on through all the following operations.

The trend toward larger packages, especially in the throwing of rayon, has necessitated revamping of equipment and supplies, and in many cases the purchase and installation of new equipment. In this there has been a tendency for some throwing mills, as well as certain machine builders, to go to the extreme, with the result that they have run into difficulties. There is a happy medium in all things, and a bobbin or package holding 8 oz. of yarn appears to be the most satisfactory size to handle on equipment available at the present time.

Rebuilding of old equipment to handle larger bobbins is also likely to give rise to difficulties, since much old equipment is of too light construction to carry the additional package weight without reduction in spindle speed. If machines are old, it will usually be found it is better practice, and cheaper in the long run, to replace such equipment with new, modern, improved machines.

Winding

Although producers are still delivering rayon in 44-in. skeins, which size was originally copied from that of silk skeins, there is a growing demand for delivery of rayon in larger skeins. Cotton skeins have for years been reeled in the 54-in. size. Some cotton spinners, who use their own yarn in further processing, long ago discovered the advantages of larger skein; hence reel their yarn into 72-in. cross-wound skeins.

There is a possibility that in the near future some rayon producers may change their reeling equipment to accommodate this demand, especially since a larger size of skein would mean certain advantages to them as well as to throwsters. Skeins of 54 in. or larger would permit greater poundage without the disadvantages attendant to appreciably increasing yardage of the present size skeins.

Throwing mills in which equipment is being revamped to handle large packages should bear in mind that there is more to revamping than just using larger bobbins. Old-style standard winding frames will, if not too old or of too light construction, take larger bobbins without rebuilding, but they should be changed over to oil-less bearings or spindleless take-ups. The use of wire swifts, on which skeins will lie flat instead of bunching to center, as frequently happens when cotton swift bands are used, is not only good practice, but essential when winding the heavier rayon skeins. Further, since poorly wound bobbins will cause trouble at the twisters, it is consistent with good workmanship that bobbins be wound neither too soft nor too hard, and that they have a good even traverse and a level wind.

Twisting and Redrawing

Most rayon throwing today is in the single-end rayon-crepe class. Changing over to the balanced large-package system necessitates either rebuilding old-style twisters which take small bobbins and shafts, or replacement of these machines with new equipment of improved design, constructed to carry larger packages and heavier loads without loss in speed.

If old type up-twisters are rebuilt to accommodate larger bobbins and shafts, it is necessary to re-space all spindles, both those on take-up and spinning rail; replace take-up rolls with rolls of sufficient width to match the wider iron-heads or shafts, and often to replace spindles with those of the new heavy type. Even with these replacements, it may be found necessary to reduce spindle speed, because the construction of the machines may not stand the increased load without vibrating and decreasing the quality of production. On the other hand, with new-type, heavy frame construction, heavy and improved spindles, etc., spindle speeds can be stepped up to as high as 14,000 r.p.m. and still impart uniform twist. Some new twisters are being built with fixed gudgeons instead of the loose take-up bobbin gudgeons of older models. The fact that this is a great improvement, especially in large-package operation, makes use of gudgeons of this type practically essential. While all of the types of up-twisters at present on the market conform to the basic type in use for many years, at least two manufacturers are working on up-twisters of the type which give two turns of twist for each spindle revolution.

For shipment by throwster to customer of the twisted rayon it is necessary to redraw the yarn from the twister shafts onto shipping bobbins. Until some type of inexpensive twister take-up shaft is developed to eliminate this otherwise unnecessary operation, it will have to be continued. However, improved redraw frames make it possible to perform this redrawing operation at very high speed and at the same time deliver a well-formed and well-wound bobbin. The most important point in redrawing is maintaining of proper and uniform tension control on let-off bobbins; such control can be obtained by various braking attachments, with which some machines of this type are being equipped by their manufacturers.

Good Scouring Needed

To obtain bright colors and soft hand in finishing fancy worsteds

By DAVID WELSH

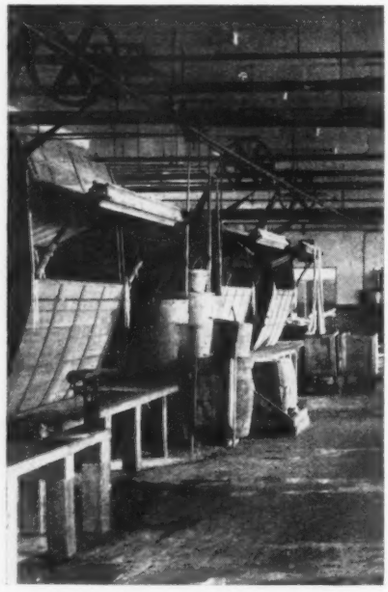
THE OBJECTIVES of the finisher when processing fancy worsteds are to obtain a clean piece of goods; bright, snappy colors; the best and softest hand obtainable. If silk decorations are used, they should be brought out in lively contrast to the wool; they should have a real sparkle. The scouring operation is of paramount importance in obtaining these objectives.

Fancy worsteds go through the finishing department by the shortest route. They do not have the help of fulling to cover up careless weaving or burling. Therefore these fabrics must have particular attention in the burling and sewing department; they must be made as nearly perfect as the mender's skill will permit. Knots which are snapped out (instead of being gently taken to the back and coaxed out with the knothead and tails intact and left for the shear to clip off when the back is sheared) cause a lot of unnecessary mending; even a few stitches snapped out, must be sewed in by the fine sewer. Tight picks should be deftly scratched to a normal position in the grease to avoid the effect of a wiry, hard-twisted pick which would call for an allowance. Threads out, wrong draws, misplaced threads, wrong colors—especially on four-harness weaves—are defects that cannot be permitted to get past the mender.

Ready for the Washer

With burling and mending properly attended to, fancy worsteds are ready for the washer. Due to the improper location of soap tanks or to lack of sufficient tankage, many finishers are forced to wet out the goods before adding the soap. This is not good practice, especially when warm water is employed for the wetting out. Warm water starts the grease, stains the colors in the worsted and the silk, and hinders the work of soap when it finally is added.

Best practice is to make up a soap of sufficient body and with the right amount of alkali to do the work required. This should be added to the dry goods after they have been sewed and run around once in the washer to take out all the tangles. An average of 4 to 6 pailfuls of soap is required for each piece, according to the weight of goods. This should be added without any water while the washer is standing. The machine is started and allowed to run 10 min. Each piece should have enough soap so that no dark spots or bare places show up. A 10-min. run will usually saponify or emulsify the oil in the goods and at the same time gather the dirt into one mass of lather.



Best practice is to give the goods a double soaping. The first soaping will take about 10 min., after which the dirty lather is run off, fresh soap added, and scouring continued for 40 min. more

Final Soaping

A further running in this mixture of soap, dirt, and oil is not good practice. The gates are now opened—both the bottom gates and the slide gate—and this dirty lather is allowed to escape—no water to be used yet. When as much lather as will run off is gone, the gates are closed and about 1 pailful of soap is added for each piece—more if found necessary. In a few minutes this will work up into a rich, creamy lather that sticks to the ring board or sides of the washer as it spatters.

The function of soap as a cleanser is readily recognized; its value as a softener is often overlooked. On fine, fancy, clear-finish worsteds, 40 min. in the second soap is not too long a time, as the soap works wonders in producing clean, soft goods. Next rinse with cold water for 75 min. If the lather has acted as described above, the cold-water rinse will clear the goods of soap and give even brighter colors than will a warm-water rinse. The writer finds that the soap works better if it is boiled or cooked at a lively simmer for from 3 to 4 hr. and not chilled too fast when filling up.

If the fabric contains silk decorations, it should be treated for a few minutes in a weak bath of acetic acid just before it is removed from the washer. Dilute 1 qt. of acetic acid in a pail of cold water and add it to the washer with the goods just covered with cold water.

Most clear-finished worsteds are laid in the loom just wide enough to come to the finisher around 62 to 64 in. The scouring will take them down to about 54 to 56 in. The goods are best dried to about 60 in.; this gives them enough stretch while wet to overcome washer wrinkles which might appear in dark colors.

Brushing and Pressing

From the dryer the fabrics are taken to the brushing machine. It is better not to sand clear-finish worsteds, as the sandpaper or emery cuts the fibers, leaving thousands of fine, upright dust-catchers, that can never be sheared out clear. The bristle or fiber brush clears out the bottom of the twill. Then when the pieces are sheared, a clean-cut, round thread is presented, giving the wearer a garment easy to keep brushed clean. If the goods are rotary pressed, light shades will always stand heavier pressing than dark. If the pieces are rolled up on the press and left overnight on the roll, the effect will be a close approach to plate pressing. A run on a conditioning machine imparts a kindly handle, and gives the fabric the desired cool, clothy feel.

Finishing Gamsas

Under present conditions finisher must cut corners but still satisfy his customers

By PHILIP LEBRUN

THE NAME "gamsa" is applied to a satin-back crepe usually constructed of viscose rayon. However, a number of variations using acetate warps are also sold under the same name. The original version of this cloth had a rough, sandy feel on one side, and a smooth, satiny feel on the other. In the last few seasons, however, the trade has tended towards a softer and smoother cloth. At present the finished cloth must be soft and full. It must also have a dull, close face; at the same time, it must not be rough or sandy to the touch.

Rayon gamsas and acetate rayon gamsas cannot be handled in the same way before boiling-off. The all-rayon fabric, if properly constructed, usually requires no special preparation previous to the boil-off. On the other hand, the tendency toward producing cheaper fabrics in order to meet competition has resulted in the cutting down of the number of ends and picks in the fabric. This often results in finished cloth which is too open in appearance. To offset this, the all-rayon fabric is frequently allowed to soak overnight in cold water before boiling-off. This shrinks the face of the fabric, so that no open spaces are noted between the yarns after finishing.

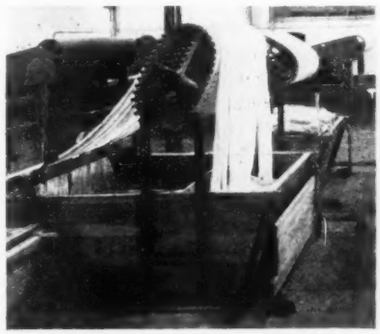
Gray Embossing

Acetate gamsas are embossed before scouring. In this operation care should be taken that the pressure on the embossing roller is evenly distributed across the full width of the cloth. If the gamsa has been cheapened by reducing the number of ends and picks, the pressure on the embossing calender should be kept at a minimum. Deep embossing will result in an extremely open face, especially at the bottoms of the crepe or pebble induced by the embossing roller.

While some companies still boil-off manually in skein form, the cost of manual boil-off as compared to that of the continuous boil-off process is fast causing the former method to be discarded. All-rayon gamsas are first processed full width through a weak solution (½° Be.) of caustic soda at 90 to 100° F. This is followed by a rinse and soaping on a rope scouring unit. Acetate gamsas are not given any caustic treatment; after wetting out at full width in hot water, they go directly into a hot soap bath, which is followed by the usual rinses. Acetate gamsas intended for printing are usually saponified before or during the boil-off by any of the methods described in a previous article (TEXTILE WORLD, November, 1937).

Precautions in Dyeing

Dyeing of gamsas does not differ materially from the usual procedure followed in the dyeing of other rayon and acetate fabrics. A few of the cheaper all-rayon gamsas have a tendency to curl badly at the selvages during the dyeing. Such fabrics will usually be streaky and poorly penetrated in the curled-up portion. A cloth of this nature should be dyed more slowly. Addition of a penetrating and leveling assistant will help also. If tetra-sodium pyrophosphate is used for this purpose, about 2% on the weight of the fabric is usually sufficient to retard the dyeing slightly and result in better penetration.



Reel machines are often employed in dyeing fabrics containing acetate yarn

Gamsas are finished in about the same way as are satin-back crepes. After dyeing, the cloth is centrifuged to remove excess water. Care must be taken with the acetate type of goods not to whizz the cloth too dry. This would result in breaks, which would be difficult to remove later on. The goods are next dried on a loop dryer or dry box and framed. When a dry, slightly raspy touch with a somewhat lustrous face is permissible, all that is necessary is to frame the fabric to width and give it a run on a three-roll silk calender. If a softer, fuller hand is required, a different procedure is necessary. After framing, the goods are returned to a two-roll mangle and run through a solution containing about 1 gal. of sulphonated olive oil, 1 pint of glycerine, and 2 qt. of a good commercial dulling paste to 50 gal. of water. Drying, tentering, and calendering complete the process.

Overcoming Raspiness

A fabric finished in the manner just described will be satisfactory to most people. However, a few customers will still object to the slight raspiness or sandy touch on the crepe side of the goods. Various expedients have been tried to overcome this. A method which proves satisfactory in some cases is to finish the gamsa on a Palmer machine. The cloth must be run with a very loose blanket and with the satin side against the steam cylinder, so as not to make the face too lustrous. Even then, an increased amount of duller is necessary in the finishing formula. If Palmer-finished gamsas lack the fullness and softness expected by the customer, a final decating treatment can be substituted for the run over the Palmer machine.

With the present low prices paid for dyeing and finishing gamsas, any complicated process is out of the question, and the finisher must cut all the corners he can. One procedure is to boil-off and dye as outlined above, then add a small amount of a fatty alcohol sulphate or similar type of finishing compound to the final rinse water. (If dull yarns are not used in weaving the goods, a small amount of duller is also added to the final rinse after dyeing.) This is followed by centrifuging, drying, and framing to width. The fabric is then decatized and calendered lightly. The additional cost of the finishing compound is more than offset by the extra operations and other chemicals saved. Gamsas finished by this method should have the soft, full, and sleek handle demanded today.

LOOMFIXERS' MANUAL

WOOL SECTION — *Chapter III (Continued)*

By BENJAMIN F. HAYES

Head Motions

THE SETTING of shuttle boxes, so they will come even with the race place, is an important part of loomfixing. A diagrammatic view of the box motion and its connections is shown in Fig. W8. The first job, of course, is to build a box pattern chain. In the case of automatic looms it is necessary only to build for boxes one to four on one side of the loom. When 4 x 4 looms are in use, the box chain should be built so that when the first box on one side is opposite the race plate, the fourth box on the other side will be in position; when the second box on the one side comes into position, the third box on the other side should be opposite the race plate; and so on.

Adjusting New and Old Looms

In the case of new looms, procedure for setting the boxes is first to set the top box on each side in proper position, with the box lifter chain tight. If the second boxes do not come to exactly the same height as the first ones, they can be adjusted by moving the lifter chain up or down in the box-lifting-lever slot. For the same purpose, box lift adjusters are provided for boxes three and four.

If the looms to be adjusted are not new, but have, for example, been operated for several years with only two boxes in use, an entirely different situation prevails. In such cases, in all probability, boxes three and four will be much too high (in comparison with Nos. 1 and 2); yet if they are set down by manipulation of the adjusting rod the first two boxes will become too low. The reason behind this condition is that the box lifter chain has, through long use, become worn at each place it contacts a sheave. As will be seen in the diagram, there are six of these sheaves around which the chain passes. Thus, there are six places at which wear occurs; the total wear at all six points may sometimes aggregate as much as ¼ in.

Certainly the simplest—and many times a very satisfactory—remedy for a situation of this kind is merely to turn the box lifter chain over, thus exposing to the sheaves the side which has not yet been worn down. Of course, it is always possible some other loomfixer has previously made use of the same artifice; in such a case other methods must be adopted. A good method is to place a wire staple on the box lifter chain in such a position that the staple will be riding on a sheave when the low box comes into position. Actually, what this amounts to is simply replacing with one staple what has worn off the chain in all six places.

Should application of such a staple raise the low box too much, the staple should be removed, flattened out a little, and replaced. If application of a single staple does not raise the box a sufficient amount, it may be necessary to attach a second staple, in such a manner that it will ride on another sheave at the same time the first staple is in contact with its sheave. But, in making a repair of this kind, care must be exercised to make sure neither staple comes in contact with a sheave at a time when a high box is opposite the race plate.

Where a chain is so badly worn that repair, either by turning the chain or applying a staple or staples, is impractical the thing to do is, naturally, to secure and install a new chain.

Every pushing spring in a head motion should be kept well oiled, lest, becoming dry, they wear creases in the rods passing through them. This is important because such creases may eventually cause springs to catch and, in some cases, reverse their action, turning them into pulling springs when they are designed for pushing purposes.

Two such springs are shown in Fig. W8. One is that which surrounds the box lifter rod, and the other is the box lowering spring. Other springs of this sort are those, on the top part of the head motion, which push the various vibrators down.

It should, of course, be remembered that, while oiling will definitely improve the action and lengthen the useful life of springs, it will not guarantee indefinitely their usefulness. All pushing springs lose their energy more quickly than pulling springs. When they become weak, they can be stretched out to lengthen their period of usefulness but this is not a very satisfactory or long-lasting repair, and the best practice is to replace with new ones such springs as soon as they give evidence of having become weakened to such an extent they are no longer efficient.

Courtesy Crompton & Knowles Loom Works

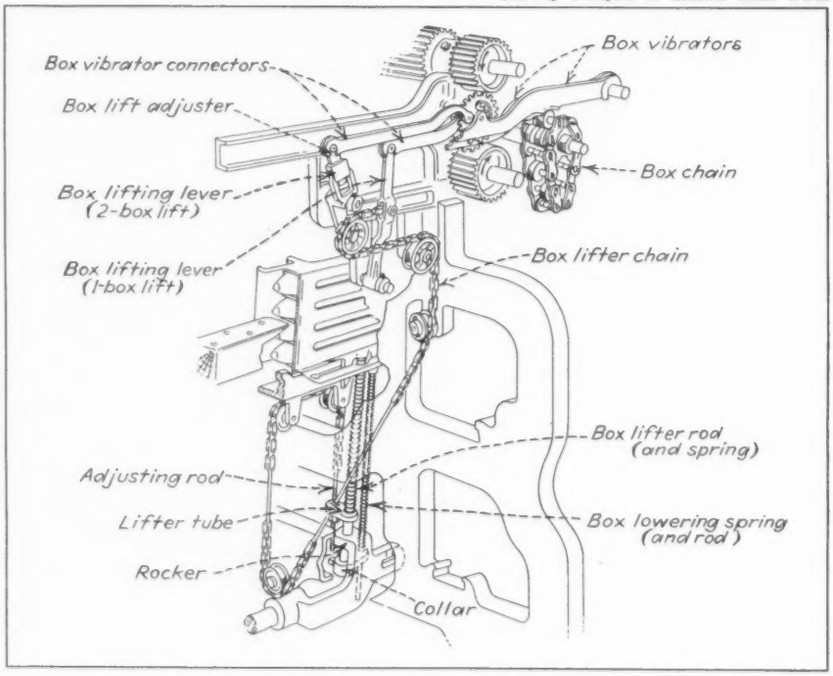


Fig. W8. The box motion and its connections.

LOOMFIXERS' MANUAL

COTTON SECTION — *Chapter III (Continued)*

By IVAR MOBERG

Loom Driving and Braking Motions

FIG. C23 shows a C & K clutch drive for cotton looms. The builder's instructions for adjusting are as follows:

Normal adjustment: "Ordinarily, any adjustment that is necessary can be made by adjusting screw *A*. To add friction, turn this screw clockwise. A quarter turn should be sufficient to compensate for normal wear."

Resetting the shipping mechanism: "If the clutch has worn to the point where enough friction cannot be obtained by adjusting screw *A*, or if for any reason the shipping mechanism is taken apart, the directions given below should be followed carefully in resetting the shipper and brake handles and related parts. There are six steps in the resetting process."

Step 1 consists of positioning the toggle collar *B*. "Connect everything but shipper connector *C*, which must not be slipped on shipper-connector pin *P* until *Step 3* is reached. Turn adjusting screw *A* counter-clockwise until the U-shaped toggle yoke *D* is thoroughly loosened. Turn setscrew *E* counter-clockwise until collar *B* is free to move on the shaft. Then be sure a $\frac{3}{16}$-in. clearance is maintained; insert a suitable gage $\frac{3}{16}$ in. thick between collar *B* and washer *W*. Move the assembly along the shaft by means of shipper lever *Y* until motor gear *X* is firmly against the corks in the friction plate. Tighten setscrew *E* in collar *B* and remove the gage. At this point finger *G* and link *H* should be in the position shown in *Sec. 2*." *Sec. 1* shows the position of the parts with the shipper handle in the "off" position; *Sec. 2*, the same parts with the shipper handle in the "on" position.

Step 2 is concerned with obtaining proper position of brake and shipper handles for loom running. "Pull brake handle to 'off' position as shown in *Sec. 4*. Set the lockscrew *J* to the amount of brake lock desired. This preferably should be as light as it can be made without having the handle knock off from the vibration of the loom when running. Set the screw *K* so that it is not more than $\frac{1}{16}$ in. from contacting the bunter lever.

"With the brake handle in this position and the shipper handle pulled to the 'on' position, turn the screw *L* until the shipper handle is in the position shown in *Sec. 4*. Center *N* should be just to the right of a straight line between *M* and *O*."

Step 3 consists of adjusting length of connector *C*. "With handles set as in *Sec. 4* and clutch set as in *Sec. 2*, adjust the length of connector *C* so that it will slip easily on pin *P*. Extreme care should be taken in making this adjustment, so that there is at least a clearance of a drop wire between the stop pin *Z* and the sleeve *F*."

Step 4 relates to positioning of brake and shipper handles for loom stopped. "Throw brake handle to the 'on' position and shipper handle to the 'off' position, as shown in *Sec. 5*. Adjust setscrew *Q*, *Sec. 3*, until centers *R*, *S*, and *T* are in a straight line."

Step 5. To set friction, "adjust screw *A* as described under 'Normal adjustment'."

Step 6 consists of adjusting springs *U* and *V*. "The tension given to springs *U* and *V* should be as light as possible, yet they should be adjusted so that the handles will be knocked off quickly under the action of the filling stop motion, the warp stop motion, and the protection."

Fig. C24 shows another C & K shipper and brake motion. This friction clutch is of the internal-expanding type and the brake is external-

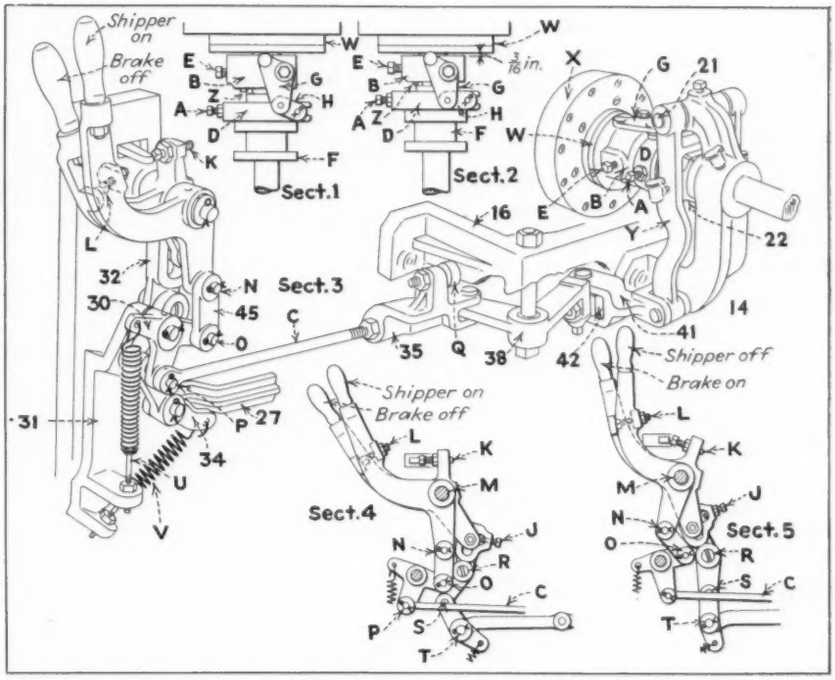


Fig. C23. Crompton & Knowles diagram showing clutch drive for cotton looms. Parts mentioned in this article have been designated by letters, as follows: *A*, adjusting screw; *B*, toggle collar; *C*, shipper connector; *D*, toggle yoke; *E*, clutch-collar setscrew; *F*, clutch sleeve; *G*, clutch finger; *H*, toggle link; *J*, lockscrew; *K*, *L*, adjusting screws; *M*, *N*, *O*, pin centers of shipper assembly; *P*, Shipper-connector pin; *Q*, rubber bumper and setscrew; *R*, *S*, *T*, pin centers of brake assembly; *U*, intermediate-lever spring; *V*, brake-lever spring; *W*, thrust washer; *X*, motor gear; *Y*, shipper lever; *Z*, stop pin. Other parts of this drive, not specifically mentioned in the article, have been designated by numbers as follows: *14*, outboard bearing; *16*, motor frame; *21*, stud in shipper lever; *22*, swivel yoke; *27*, brake lever; *30*, intermediate lever; *31*, stand for intermediate lever; *32*, brake lock lever; *34*, angle lever for brake; *35*, rod head for shipper connector; *38*, angle lever; *41*, shipper-lever connector; *42*, swivel on shipper-lever connector; *45*, shipper link.

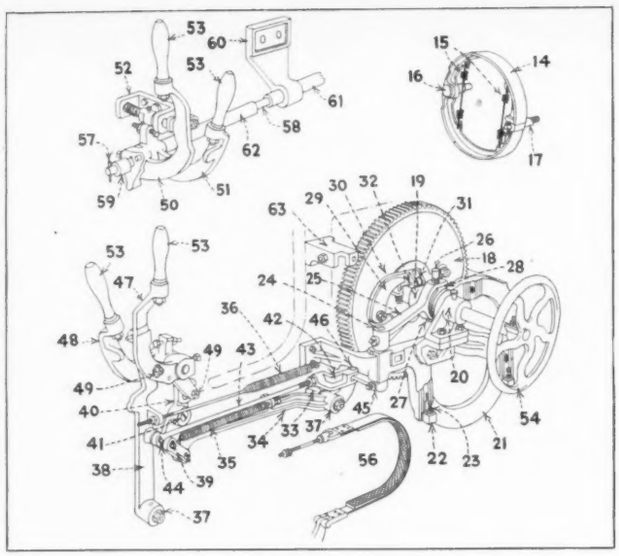


Fig. C24. Diagram of Crompton & Knowles shipper and brake motion, with clutch of internal-expanding type and external-contracting brake. Parts designated are as follows: *14*, clutch shoe; *15*, spring for shoe; *16*, stud for shoe; *17*, expansion stud for shoe; *18*, motor gear; *19*, clutch spool; *20*, outside crankshaft bearing; *21*, motor plate; *22*, stud in motor plate; *23*, adjustment screw; *24*, shipper-lever shaft; *25*, shipper lever; *26*, screw for shipper-lever top; *27*, shipper-lever screw; *28*, swivel yoke in lever; *29*, outside clutch-finger; *30*, inside clutch-finger; *31*, clutch-finger roll; *32*, roll studs; *33*, brake-lever stand, *34*, brake lever; *35*, brake spring; *36*, shipper spring; *37*, bushing in brake and intermediate levers; *38*, intermediate lever; *39*, brake-lever link; *40*, lock-lever for brake; *41*, lock-lever stud; *42*, rod head for shipper connector; *43*, shipper connector; *44*, shipper-connector stud in intermediate lever; *45*, shipper arm; *46*, shipper-arm stud; *47*, shipper handle; *48*, brake handle; *49*, lock-lever stud; *50*, shipper handle (head end); *51*, brake handle (head end); *52*, handle stop; *53*, wood grip for shipper and brake handles; *54*, handwheel; *56*, brake-band assembly; *57*, shipper-shaft taper-pin; *58*, shipper shaft; *59*, space collar; *60*, shipper-shaft support; *61-62*, shipper-shaft tubes; 63, anchor.

contracting, both working on the same drum. The setting of this motion is similar to that described for Fig. C23, with the exception that adjustment of friction is made by turning the screw in the inside clutch-finger *30* so that it will raise the outside clutch-finger *29* for more friction and lower it for less. Friction should never be adjusted by changing the shipper-handle connections, once these have been properly set. The amount of braking power is adjusted by tightening up on the brake band extension going through the anchor *63* by turning the nut visible on the front of anchor.

(The Energy Drive, a recent development in power transmission, will be taken up later in this series—*Editor*)

Fig. C25 shows a Draper loom brake, of the old type but still in use on a large number of looms. The setting and adjustment of this brake is relatively easy. It includes the following steps:

Step 1. Move the brake bushing up or down in the slot in loomside so that the brake contacts the brake wheel along the entire arc. Tighten the brake bushing in this position, taking care that the brake lines up with the brake wheel.

Step 2. Move the lay forward until daggers bring the live frog as far forward as it will go with brake-rod disconnected. Adjust the length of the brake-rod, by screwing it in or out in the threaded yoke on the inside of the brake, until it will just barely slip over the lug on the live frog with the brake against the brakewheel. Care should be taken that the live frog does not move away from its forward position during adjustment of the rod. If this happens, the brake-rod is likely to be too short and will break the brake casting when the loom bangs off. With the brake-rod adjusted as described above, the brake will be forced heavily against the brake wheel when the loom bangs off and compresses the packing in the frog, which is thus forced a trifle more forward than it was during adjustment of the brake rod.

Copyright 1932 Draper Corp., Hopedale, Mass.

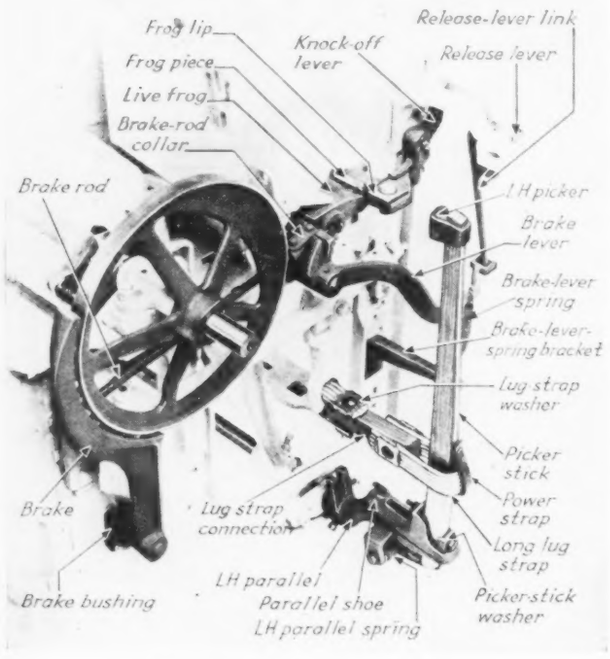


Fig. C25. Draper loom brake.

Step 3. With the adjusting screw in the brake-rod collar screwed well out, the brake-rod collar is slid on the rod until it comes up against the brake lever. In this position, both setscrews in the brake-rod collar should be tightened. At this point the brake lever is resting on the lip of the shipper handle and is ineffective. Therefore, the brake lever must be raised out of contact with the lip, so that the action of the brake-lever spring, or weight, can force the brake tightly against the brake wheel. To accomplish this, the adjusting screw in the brake-rod collar is screwed in until the brake lever is raised $\frac{1}{4}$ in. above the lip on the shipper handle. In this position the check nut on the screw is tightened.

Step 4. Tighten the spring-end screw or, in cases where weight is used, move the weight on the brake lever until proper braking power is obtained.

Step 5. Pull shipper handle into "on" position and make sure the brake is released. Loosen release-lever stud in the slot of the shipper-lock casting, Fig. C20 (Textile World, March, 1938 issue), and slide it up or down until, in raised position, it will hold the release-lever link $\frac{1}{16}$ in. below the extreme end of the brake lever. The release lever should now fall down of its own weight when the shipper handle is in "on" position. The shipper handle should now be thrown into "off" position and the release lever raised to make sure it will stay in the raised position and release the brake. Pull the handle once more into "on" position to make certain the lever will drop of its own weight.

FREE FOR THE ASKING

READERS interested in literature reviewed on this page may secure copies by writing to TEXTILE WORLD, 330 West 42d St., New York, giving their company connection.

1. Stainless Steel. Republic Steel Corp. Bulletin describes and pictures uses for Enduro stainless and heat-resisting steel; includes list of twenty-two uses in textile bleaching, dyeing, and finishing plants.

2. Motors. Fairbanks, Morse & Co. Direct-current motors, and their construction details, are described in an 8-page bulletin.

3. Instruments. General Electric Co. Vol. 1, No. 1 of publication titled *Instruments in Industry* contains articles outlining uses to which instruments can be put, and lists several examples of savings achieved by their use. Folder GEA-2011-A, describes uses of company's line of portable instruments for general-utility commercial testing.

4. Packaging. Hinde & Dauch Paper Co. Portfolio, titled *Ideas*, presents before-and-after photographs of shipping boxes used by various companies.

5. Boxes. Lyon Metal Products, Inc. 16-page booklet, No. 611-D, describes and illustrates company's line of shelf, stacking, and shop boxes; box handles; storage shelving; and lockers.

6. Speed Control. Columbia Vari-Speed Co. Pamphlet describes construction and operation features of company's "JFS-Jr." Vari-speed control equipment. Contains dimensional diagrams and selection tables.

7. Twisters. Atwood Machine Co. March issue of *Atwood Twists* contains article discussing performance records of company's twisters, and check-charts of oilless bearings on these machines.

8. Condensers. Whitin Machine Works. Folder describes Knowlton & Newton Co. picker room return air condenser, now being manufactured by Whitin.

9. Conveyors. Mathews Conveyor Co. Booklet titled *Equipping Industry for Continuous Production* describes and illustrates seventeen types of conveyors manufactured by the company; contains many photographs of conveyor installations in industrial plants.

10. Lubrication; Power Transmission. E. F. Houghton & Co. March issue of *Research Illustrated* contains several articles on leather belting and machine lubrication.

11. Potentiometers. Bristol Co. Bulletin No. 507 describes and explains operating characteristics of company's round-chart potentiometers.

12. Sizing. Charles B. Johnson. March issue of *Rayon Warp Sizing Specialist* contains articles on sizer construction and elimination of fabric defects due to improper sizing.

13. Self-Locking Nuts. Elastic Stop Nut Corp. 48-page presentation describes and illustrates company's product for eliminating axial play between bolts and nuts and maintaining constant pressure on the load-carrying sides of the thread. Contains large data section showing types available, sizes, prices, etc.

14. Water Conditioning. Elgin Softener Corp. Booklet entitled *The Inside Story of Boiler Water Conditioning* explains conditions most frequently encountered and discusses various methods of softening and treating water, and removing concentration from boilers.

15. Corrosion Resisting Alloys. Haynes Stellite Co. 36-page booklet presents data on Hastelloy alloys; points covered include chemical and physical properties, available forms, methods of fabrication, typical applications, etc.

16. Spraying Equipment. DeVilbiss Co. Catalog ID describes company's line of industrial spray-painting and finishing equipment, together with accessories; contains specification and price data.

17. Hose. Manhattan Rubber Mfg. Division, Raybestos-Manhattan, Inc. Display card gives instruction for proper care of rubber hose; includes rules for unpacking, using, storing, attaching couplings, etc.

18. Nickel Alloys. International Nickel Co., Inc. Booklet titled *6 Minutes with 6 Metals* briefly describes and illustrates properties and uses of various alloys manufactured by this company.

19. Valves. Hancock Valve Division, Manning, Maxwell & Moore, Inc. Bulletin No. 5-7000 describes and illustrates construction features of, and tells how to select, valves.

20. Conveyors. Cleveland Crane & Engineering Co. Folder illustrates various uses of a number of different types of conveyors; contains brief description of each type.

21. Laminated Shims. Laminated Shim Co., Inc. Folder describes and illustrates use of laminated shims; highlights ease of adjustment by simply peeling off laminated sections until proper thickness is reached.

22. Electric Cable. Anaconda Wire & Cable Co. Publication No. C-39 describes properties of Anaconda network cable, and illustrates tests conducted to prove these properties.

23. Silicates. Philadelphia Quartz Co. April issue of *Silicated P's and Q's* contains article describing studies of cleansing properties of silicates of soda.

24. Service Socket Instruments. Westinghouse Electric & Mfg. Co. 20-page booklet, describes company's line of socket instruments for industrial application. Contains construction and use data and illustrations.

25. Boiler Meters. Bailey Meter Co. Bulletin No. 46 describes purposes of and uses to which boiler meters can be put, as well as operating advantages they make possible.

Staple Cotton Fabrics

By JOHN HOYE

Fabric Technician with W. Harris Thurston, New York

This twenty-ninth installment of Mr. Hoye's series of articles on staple cotton fabrics — which began in the January, 1936 issue—completes his discussion of Turkish toweling (terry cloth), and begins his discussion of other types of toweling.

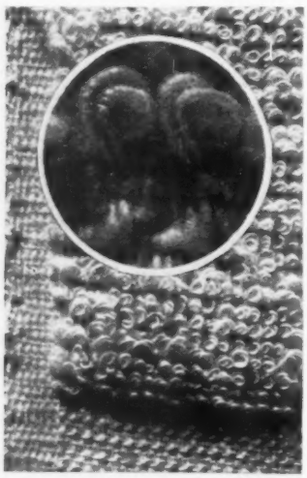
TURKISH TOWELING *(Concluded)*

Terry Loop Toweling Piece Goods

Large quantities of both single- and double-loop terry cloths with various colored yarn designs, which include brightly colored stripes, checks, plaids, and printed drapery designs (on plain towelings), as well as all-white and solid colors, are sold as piece goods and manufactured into bathrobes, beach robes, baby bath blankets, wash cloths, etc. These are made in widths ranging from 16 to 40 in. A limited quantity is made in widths of 50 to 72 in. They are woven without borders; in some cheaper qualities the loop is woven on one side of the cloth only.

Uses of terry towelings:

Hand, face, bath towels; bath sheets, bath slippers, wash cloths, baby bath blankets, bibs, dolls, beach robes, bathrobes, beach bags, draperies (printed).



Standard terry towel, double thread (loop), unbleached, thread count 60x 32 (40 pile, 20 ground) carded single yarns. (Reprinted from last month's installment)

Yarns: Warp, 12s to 20s, 20/2 to 30/2. *Filling,* 8s to 18s.

Widths: 16, 18, 20, 22, 24, 26, 28, 36, 42 in.; 32, 36, and 40 in. splits. Also made in 18 in. roller toweling, and in wide piece goods (no borders) 16 to 72 in.

Examples gray constructions:

	Ends	Picks	Warp Yarn	Filling Yarn
24. in Double-loop terry pile....	26 ground 52 pile	33 ..	14s ground 16s pile	14s ..

Approximate number of loops per square inch on each side of cloth.....= 286

	Ends	Picks	Warp Yarn	Filling Yarn
24. in Single-loop terry pile.....	36 ground 36 pile	34 ..	16s ground 14s pile	14s ..

Approximate number of loops per square inch on each side of cloth.....= 204

Standard sizes (after bleaching):

Wash Cloths	Hand Towels
12x12	16x27

Bath Towels		Bath Sheets
18x36	23x46	36x68
20x40	24x48	36x72
22x44		

Towels usually sold by weight in pounds per dozen. Standard bath towel size is 22x44 (made in weights ranging from 3¾ lb. to 10 lb. per doz.).

Outside sizes (after bleaching):

Wash Cloths	Hand Towels
11x11	15x27 18x36
13x13	15x30 (10x30)
	16x28 (17x34)
	17x34 Hemmed Sides

Bath Towels	Bath Sheets
19x40	40x68
21x42	40x72
23x46	40x40 (baby sheets)
26x52	Many of these are knitted instead of woven.

Towels Other than Terry

COTTON towels, other than terry towels, are: huck, glass, and crash towels. These usually are made in narrow widths for small-size hand, face, and kitchen towels, and for roller toweling. Carded yarns are used; and some towelings are made of part linen, while others, of low quality, are made of part-waste cotton. Usually, warp yarns are finer than filling yarns, which are heavy and soft spun in order to furnish absorption qualities.

Huck Towels

Huck toweling usually is woven on dobby looms, with a huckaback weave in which small filling floats form a pattern on the face of the cloth. Filling borders are woven at intervals. Also, huck towels may be made with a jacquard-woven name or an initial design in the center. Border and designs may be woven with colored yarns, or they may be self-color.

In some of the heavier fabrics, the warp ends are drawn two to an eye, so that two ends are woven as one. This produces a larger or more prominent design, and permits of a higher sley. Heavy-duty towels, for use in hotels, etc., are woven with two-ply warp yarn, and in some instances, with two picks in a shed.

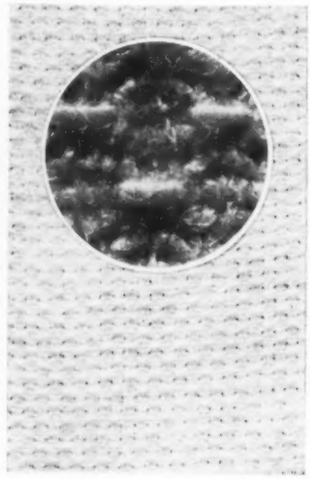
The better qualities of huck towels are made of finer yarns and with heavier construction, and in some instances, are woven with warp sateen stripes. Then there is the union huck towel, which is made with all-cotton warp and all-linen filling, and, as a rule, has a jacquard-woven name in the center. These are used by hotels and clubs, and by the linen-supply trade.

Huck towelings are finished about 1 in. less than the gray width. Towels are cut, and plain hemmed or hemstitched. Sizes vary in proportion to width; i.e., 12x24, 18x36, etc.

Warp yarns: 16s to 24s (single) 32/2 (ply). *Filling yarns:* 7s to 14s.

Examples of huck toweling (in gray):

19 in. 54x36 4.82 yd. 17 in. 70x40 5.13 yd.
15 in. 76x28 6.07 yd. 18 in. 68x62 4.31 yd.
Two-ply warp, single filling woven two picks in a shed, jacquard-woven name.
15 in. 80x32 5.80 yd. gray.
Two warp ends woven as one.
19 in. 90x30 4.86 yd. gray.
Two warp ends woven as one,
18½ in. 76x40 5.00 yd. gray.
Warp sateen stripe.



Huck toweling (bleached) —18 in., 68x42, 5.21 yd.

Recent construction photograph of $325,000 Textile Building at World's Fair of 1939 at New York. It will contain displays of fabrics and machinery

A group of patterns for printed cottons and rayons, based on motifs inspired by the World's Fair. These particular patterns are handled exclusively in New York retail circles by R. H. Macy & Co.

Official uniform for New York World's Fair attendants done in blue and orange, the official fair colors

World's Fair

Textile Building nears completion —Textiles carry Fair motifs

CONSTRUCTION of the Textile Building at the New York World's Fair 1939 is progressing rapidly. The accompanying photograph was taken about the middle of April. Naturally, landscaping will make a great difference in the appearance of the building.

Covering an acre and a half of ground, the modernistic structure will contain displays of apparel fabrics, home furnishing materials, patterns and textile machinery. Period costumes and furnishings and actual fabrication of cloths by power and hand methods will be shown. Present plans contemplate installation of a complete pilot mill to show how machine woven fabrics are made.

The Textile Building will be an expression of the modern trend in architecture. It was designed by Frederick G. Frost, Sr., Frederick G. Frost, Jr., and Ward W. Fenner. Its cost is $325,000 exclusive of equipment.

Its length is 600 ft., its greatest width 150 ft. Construction is of steel with stucco exterior. Architecturally, the dominant feature of the structure is a great "fin" above the long axis 70 ft. high and tapering to 40 ft. at the end. On the inside high wall will be flashed brief motion pictures. Just below the low end will rise a giant double hair-pin decoration which will be lighted at night to give bright illumination over a 100-ft. radius.

Of further interest to the textile industry is the offering of a great number of products carrying World's Fair motifs in their design. All types of fabrics are prominent in this group of hundreds of such products. The Fair attendants are to be uniformed in blue and orange fabrics. Garments to outfit about 1,000 women are being made by Jacob Bros., New York, from Sanforized cotton fabric.

Lanital Production

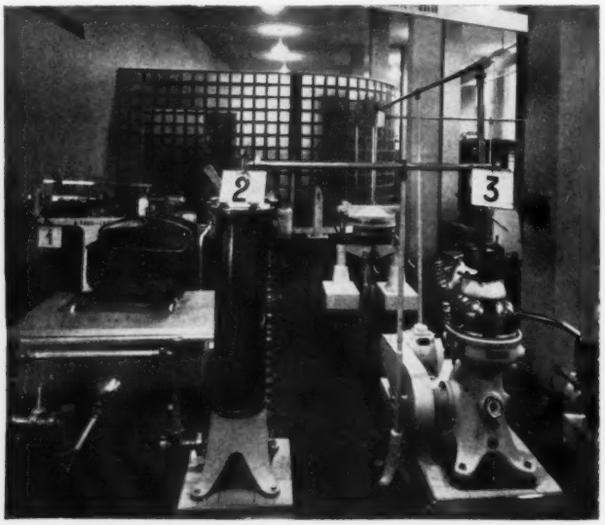
Steps in manufacture of synthetic fiber from casein shown by Snia Viscosa exhibit

THE INTEREST which textile men have shown in Lanital has been further increased by the announcement that this fiber will soon be imported into this country in commercial quantities. Recently Snia Viscosa has set up in Rome, Italy, an exhibition hall in which every step in the manufacture of Lanital is demonstrated by means of small-scale equipment. The accompanying photographs—which show the various processes involved up to the usual textile operations of carding, combing, spinning, and weaving—are reproduced through the courtesy of Meyer & Marks Yarn Co., the American distributor for Snia Viscosa products.

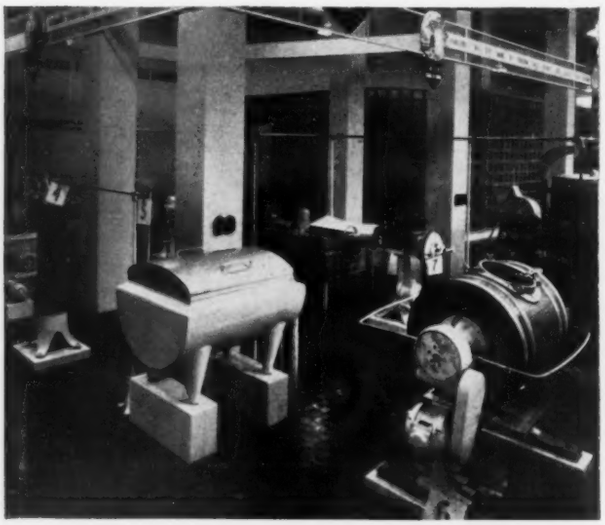
As many of our readers know, Lanital is a synthetic fiber made from casein according to a process developed by Com. Antonio Ferretti. It closely approximates wool in its chemical constitution. Like wool, it is soluble in hot caustic solutions and burns with the same characteristic odor.

According to Snia Viscosa, Lanital is now being produced at the rate of 12,000 kilograms (26,400 lb.) a day; this will be raised to 30,000 kilograms upon completion of a new plant now being erected; in October, 1935, the strength of Lanital was 10% of that of wool, while today it is more than 85%; elongation of the fiber, formerly only 15% of that of wool, is now actually greater; dyeing is carried out with acid or chrome colors at temperatures up to 195° F.; the fiber is mothproof, crush-resistant, and shows little if any shrinkage.

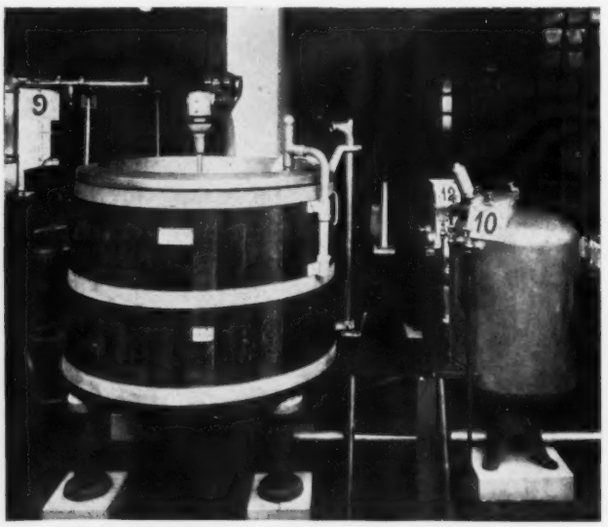
Entrance to exhibition hall in which production of Lanital is demonstrated



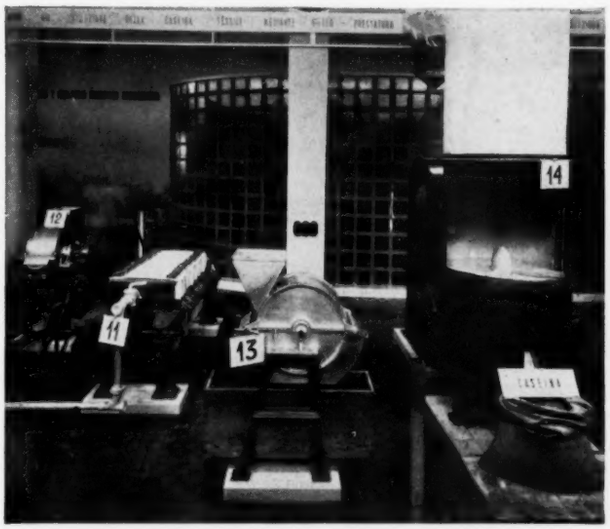
Milk is weighed on scales (1), transferred to heater (2), and then to separator (3)



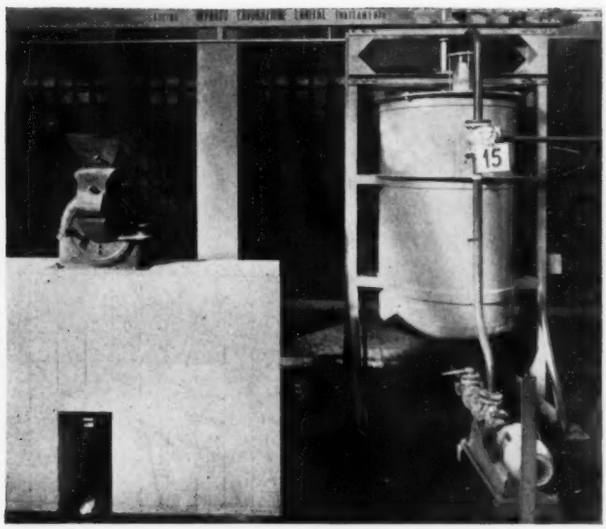
The skimmed milk progresses to the Pasteurizer (4), the acidifier (5), churn (6)



The acidified material goes to the precipitation tank (9), with the whey passing to tank (10)

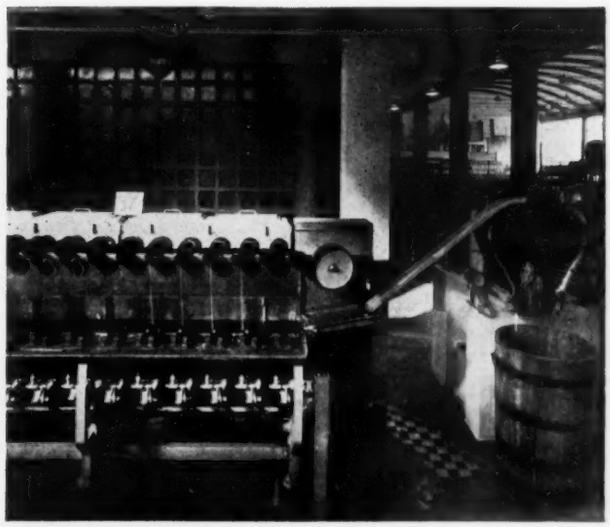


Excess liquor is removed by filter press (11); solids go to curd grinders (12) and (13), and dryer (14)



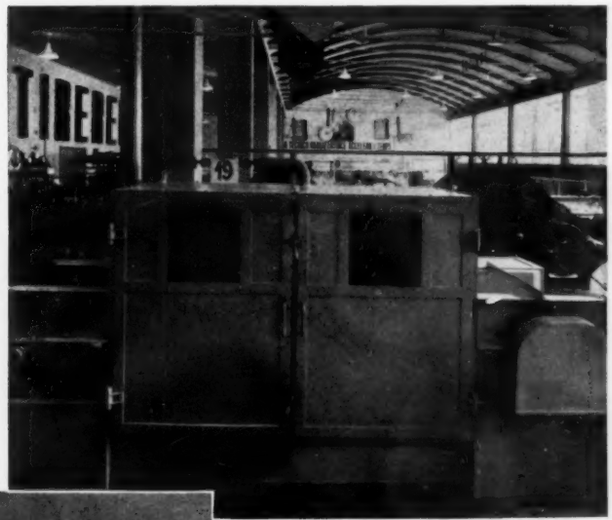
Dry casein enters mixer (15) where chemicals are added to bring it into solution

The compound enters the ageing tanks (16) and, after ageing, is again filtered



On machine (17) the fiber is spun in continuous filaments and then cut to required staple length

The fiber thus produced is now washed thoroughly in a special machine (18)



Finally the Lanital goes through dryer (19) and is ready to be shipped in bales

Display Trailers

As an aid in merchandising textiles

By ROBERT G. SILBAR

USE OF the display trailer simplifies the old drummer method of selling. The display facilities are under control of the salesman, and the novelty value of transacting business in a traveling showroom is still high. Wear and tear on samples due to packing is avoided and fresher and better looking materials are shown to the buyer.

Concerns in various fields which have adopted trailer display for their merchandise report sales increases per salesman from 100 to 500%. Their experience indicates that trailer displays reduce sales resistance and afford advantage over competitors.

Many hotels, especially in smaller towns, do not have sample rooms and at the customer's place of business the salesman frequently is unable, due to lack of room, to unpack his entire line. Conferences with the buyer at his place of business are exposed to interruption. Even when sample rooms are available, there remains the necessity for getting the buyer to come and see the display, and he is frequently impatient to return to his place of business.

The salesman in a trailer is not at these disadvantages. He brings his line and his office to the buyer, saving the buyer time and inconvenience.

With a trailer display, the time saved in traveling and packing and unpacking enables a salesman to cover a larger territory. A studio couch, at one end of the trailer display unit, provides a seat for customers during the day and a bed for the salesman at night. Hotel bills are eliminated. Railroad fares and baggage expense are replaced by the cost of trailer travel. The average trailer is said to get about one mile less per gallon of gasoline than the car traveling alone and to make about five miles per hour less speed.

Commercial trailers differ from others in that they are sold as unfurnished shells. The purchaser may equip them as he wishes. Most trailer factories having a commercial sales division, maintain a staff of designers who work with the prospective user in laying out plans suited for his individual needs. The average commercial trailer costs around $600 for a shell, with custom models averaging around $1000.

The greatest advantage of the display trailer seems to be in contacting the market in small cities and in rural districts. Salesmen calling on their trade in large cities often find themselves involved in traffic problems which make a trailer somewhat impractical. Such salesmen usually go to a parking lot, unhitch the trailer there, and drive their automobile to the buyer and bring him back in their car to the parking lot.

There is advertising value in a trailer, since the exterior may be used as a traveling billboard.

A trailer display of toweling was put on the road by Cannon Mills last year to reach customers who might not otherwise be able to see a complete exhibit of toweling. The Washington Mfg. Co., Nashville, Tenn., maker of a line of textile products, use a trailer display to cover southern States out of Atlanta, Ga. Pool Mfg. Co., Sherman, Tex., garment manufacturers and knitters, also use a traveling display car. It is understood that a distributor of upholstering fabrics is now exhibiting chairs and davenports finished in his fabrics by use of a display trailer. Several silk manufacturers and thread makers employ trailers, and use by textile mill supply houses has been noted.

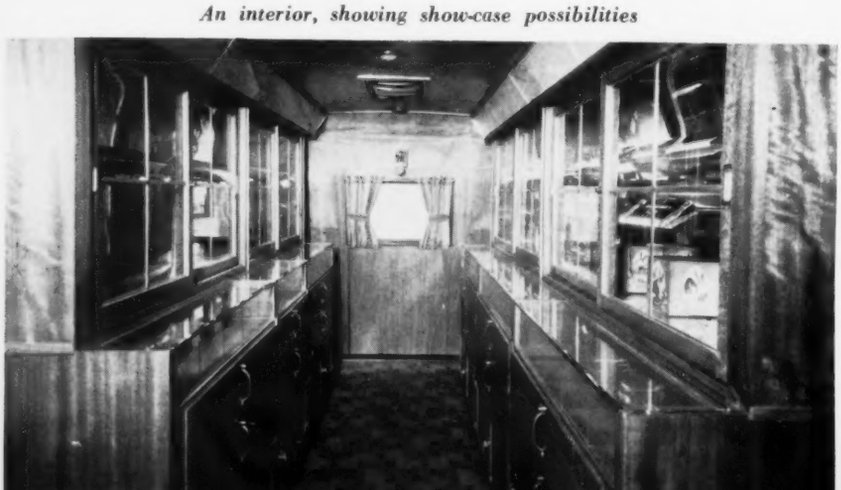
Among large manufacturers of trailers the percentage of commercial to house-type and touring trailers now runs less than 10%. The trailer industry expects within the next year or so that the commercial business will account for at least 25% of their volume.

Photos from Covered Wagon Co.

Display car of the Pool Mfg. Co.

Interior of trailer carrying the Cannon Mills line

An interior, showing show-case possibilities



TECA

...keeps its crimp

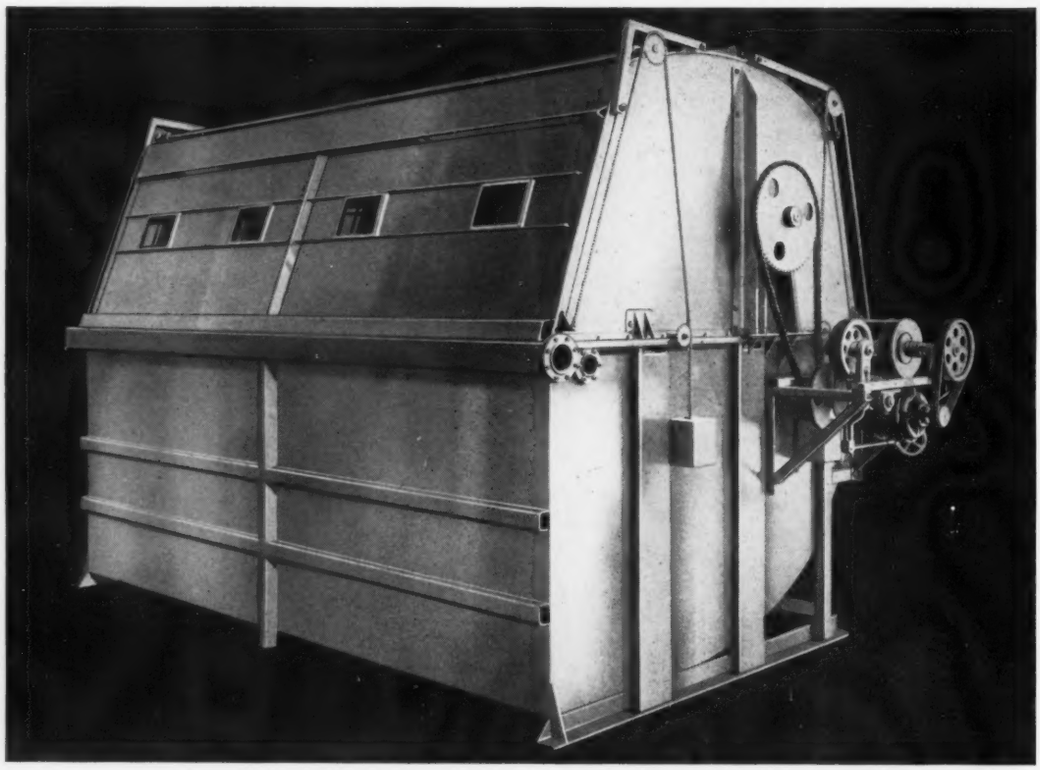
"Does the crimp last?" is the first question every textile man asks about Teca, Eastman's new acetate rayon staple.

Teca's crimp is enduring. Card and comb Teca, weave it into fabrics—and the crimp can be carried through to the finish.

Teca is the only fiber of its kind with this stabilized crimp. It can be spun to correspond with wool in the number of crimps per inch. It even looks and feels like wool—can be used on wool or worsted machines—produces fabrics with a wool-like appearance and hand.

For further information about Teca, consult the fabric development department of A. M. Tenney Associates, Inc., 10 E. 40th Street, New York City. Sales representatives for the Tennessee Eastman Corporation, subsidiary of the Eastman Kodak Co.

Stainless Steel
PIECE DYE KETTLES
to meet ALL REQUIREMENTS!



JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS, MASS.

Over $200,000 worth of Hunter totally enclosed all stainless dye kettles have been ordered or are in operation.

The Hunter Model N Piece Dye unit as illustrated is one reason why. It is self-supporting and stainless throughout. There are no separate cast iron or steel supports.

It is totally enclosed which means at least 25% steam savings. It is illuminated by acid-proof lights and fixtures. It is driven through motor and variable speed. It can be and is furnished in a size to meet any requirement. It is as readily adaptable to bleaching as to dyeing.

It is a machine for lifetime assurance of "on-shade" colors, elimination of maintenance, and lost time in boiling out.

For complete details on piece dye, sample, open width and velvet dyeing kettles as well as all types of stainless reels, write today for data.

"Hunter" also makes a full line of Fulling Mills and Cloth Washers, as well as Cloth, Stock, and Carbonizing Dryers. Send for descriptive bulletins.

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NORTH ADAMS, MASS.

Without obligation, please send free bulletin DD.

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Perky Prints

STAY BRIGHTER LONGER

when the fabric is finished with "AVITEX"

ONCE AGAIN you're bringing out a vivid variety of gay summer fabrics. Greeting the season with colors and patterns brighter and sharper than ever before.

Will these fabrics still be mill-fresh...the whites white, the colors bright...when it's time for Mrs. America to buy? Yes, if you've used "Avitex" finishing agents.

You can always depend on "Avitex" to prevent air oxidation and dealer complaints. Yellowing or unpleasant odors don't develop even after long periods of storage.

"Avitex" gives you finer finishing for cotton, linen or rayon...without increasing your present finishing costs. Our nearest office will gladly show you how. Write.

DU PONT
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TEXTILE FINISHING AGENTS

E. I. DU PONT DE NEMOURS & CO., INC.
Fine Chemicals Division, Wilmington, Delaware

SALES OFFICES:
Boston, Mass., Charlotte, N. C., Chicago, Ill., New York, N. Y., Philadelphia, Pa., Providence, R. I. and San Francisco, Calif. Represented in Canada by Canadian Industries Limited, Box 1260, Montreal, Quebec, and 372 Bay Street, Toronto, Ontario.

GETTING THE MOST FROM WINDING

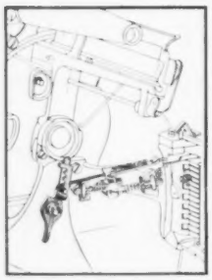
Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

NEW DIFFERENTIAL PRESSURE ADJUSTER and CONNECTING ROD (No. 50 Winder)

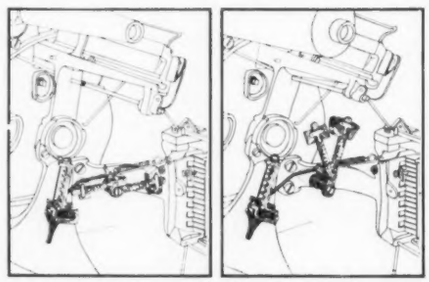
We have recently developed, for silk mills, a Differential Pressure Adjuster with seven positions, instead of four as with the standard Adjuster. Its purpose is to provide better control and greater variation of tension and pressure when winding packages of small diameter.

Cones of silk are usually small in diameter, so there is only a slight change in the position of the traverse frame back as the package builds up — and a correspondingly small arc in which the levers will operate to release tension and pressure and compensate for the increase in winding speed.

The top four positions of the new Adjuster give the same results as the four on the standard device. The three new positions cause quicker release of tension and pressure for the same movement of the traverse frame back, which is in proper proportion to the increase in yarn speed.



These sketches illustrate what happens with the standard 4-position Adjuster. With the connecting rod in the lowest position, the tension and pressure levers move only part way from horizontal to vertical — showing that only part of the tension and pressure has been released as the winding speed has increased.



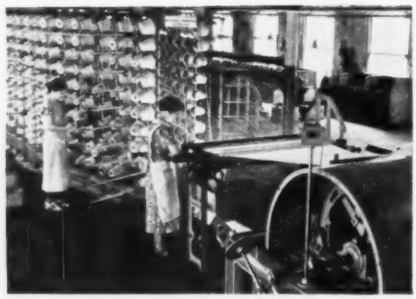
By connecting to the lowest new position, the levers move all the way from horizontal to vertical when winding a package that is only 4½" in base diameter. This is twice as far as when the standard Adjuster is used — and better control of pressure and tension is maintained throughout the building of the package.

It is important for all winding to have the levers start in the horizontal or just above the horizontal position. Starting below the horizontal or dead center position causes the levers to bind and prevents the free movement of the traverse frame; starting them too high takes off tension and pressure which might be necessary to obtain a firm foundation when winding on the bare cone or tube. The table below shows how the amount of tension and pressure is reduced as the levers go through the full 90° arc.

10°	98%	50°	64%
20°	94%	60°	50%
30°	87%	70°	34%
40°	77%	80°	17%
45°	70%	90°	0%

The new Adjuster obviates the necessity of using the Auxiliary Levers for Tension or Pressure and makes it possible for mills to build softer packages of uniform density — by starting with more tension and pressure and ending with less than previously used.

When installing the new Adjuster, a new and slightly longer connecting rod is required. Both parts can be applied easily without any other change in the machine.



DRESSING WOOLEN WARP YARNS FROM CONES

The advantages of the magazine cone creel which are familiar to most weavers of cotton, rayon and other fibres, are also being obtained for dressing woolen warps.

The use of the magazine cone creel on this operation permits the utilization of the modern high speed dresser reel as shown in the accompanying photograph, illustrating a recent installation with latest type equipment. Overend delivery from the cone makes possible increase in speed of warp dressing from the present level of from 30 to 40 Y.P.M. to 175 to 200 Y.P.M., with uniform tension on every end, and tremendously improved resultant warps.

The yarn is kept in single end form on individual cones, rather than doubled up to 48 ends on jack spools, resulting in fewer knots, and insuring fresh yarn at all times, greatly reducing stock in process. Through the magazine form of the creel, continuous operation of the dresser reel is maintained, as it is not necessary to stop for creeling.

The coning operation performed on high speed Universal winders allows for inspection of the yarn when desirable through the application of adequate slubbing devices.

The 5-section warp in the photograph contains 440 ends of 2¾ run wool. The time required for dressing is 37 minutes, which coincides with the time it takes to beam off the warp. Two dresser reels are used with each warping unit, and after dressing one complete warp, the second reel is placed in position for dressing the next warp, while the first is beamed. All lost time is eliminated, and continuous operation assured.

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

THE EDITOR SAYS

Fresh from Philadelphia

WE got a great lift out of Knitting Week in Philadelphia last month. There was a sense of virility and vitality which contrasted happily with the defeatest attitude which too many businesses have adopted in recent months.

One got the feeling that the knitting industry was definitely on the move. Some branches of it have maintained a rate of activity higher than that which has characterized industry generally. The market for most knitted products is an expanding one.

As an ardent believer in coordinated action, we are confident there is more than mere coincidence between that fact and the fact that the National Association of Hosiery Manufacturers, for example, has now the largest membership in its history. We are convinced that business progress and trade-association progress go hand in hand, and that the former cannot reach its maximum without the latter.

To the officers of the hosiery association and the Underwear Institute, which jointly sponsor the Knitting Arts Exhibition; to the management of that exhibition, and to all exhibitors, congratulations are due for staging an event which demonstrated that all business did not die last fall.

They Tell Bob Henry

WHEN Robert E. Henry retired last month as president of the American Cotton Manufacturers Association, he didn't have to wonder what his fellow members thought about him. They told him.

They told him through the various speakers at the convention who all seemed to be agreed on one thing: Bob Henry. They told him officially through Herman Cone, who made the remarks when the association's gift to the retiring president was presented. They told him individually as one after the other congratulated him.

But even more significant, in our opinion, was the lobby comment when Mr. Henry was not around. Seldom have we heard such a completely unanimous estimate of a man.

The primary reason of course was his service to the industry. We have watched him in action during the last year and we know the contribution he has made both in Washington and elsewhere. But while such service always commands respect, it does not always command love. In Bob Henry's case, it did—because of his unassuming personality, his humanness, and his consideration for others.

Thus to the roster of great leaders of the South, who have headed the A. C. M. A., is added the name of one who is most worthy of that company but whose modesty would make him deny it vigorously. That is a rare combination.

Save Your Punches!

BUSINESS has one big job ahead: It must fight for sound revision of the National Labor Relations Act. No other accomplishment will mean more to the resumption of economic progress, and the improvement of the status of both employers and employees.

However, in planning that campaign, strategy is necessary. The opposition to revision is tough. Proper timing is the most important essential of the movement. That is why we do not enthuse over some of the fireworks which have been set off during the last month. Frankly, there is not a Chinaman's chance of getting revision of the Wagner Act at this session of Congress. Consequently we believe it the part of wisdom for industry to make its plans now for the battle next session—and to save its punches in the meantime.

A Guest Editorial

WE find in "Current Information," a bulletin issued by the Cotton-Textile Institute to its members, a line of thinking which deserves major emphasis.

Dr. Claudius T. Murchison, president, urges a re-establishment of the conviction that the "long-run salvation of an industry must be found within its own resources." He says:

"Standards to be salutary must be self-imposed. Policies to be beneficial must be self-administered. Stability and prosperity to be permanent must be self-envisioned and inwardly achieved. These are the possibilities which are left to us. Their full realization requires nothing more than private, individual action based on sound business judgment. If production activities are ill-adjusted; if inventories are unduly burdensome; if the price structure has crumbled; if wage schedules are imperilled; and last but not least, if the industry's relative importance as a supplier of textile fabrics is threatened; each of these contingencies must, in reason, call for substantially the same type of response from every member of the industry.

"Given an understanding of the problems, an adequate knowledge of the facts and the will to reach judgments which are wise, he will not always find it necessary to lean upon 'open covenants openly arrived at.' Mutual assurances have inestimable value but the essence lies not in the declaration but in the spirit and practice."

Welcome, Salesmen

AS we call around at mills, we are sometimes appalled by the treatment which we see salesmen accorded. Snubbed by the telephone operator, forced to stand for a half-hour or more, they are finally insulted by some 2 x 4 sub-executive who seems to take a sadistic pleasure in telling salesmen where to get off.

Consequently, we cheer the letter posted inside the Chattanooga home office of the American Lava Corp. Headed "Welcome to Salesmen and Other Callers," signed by the president, it reads:

"Bearing in mind that when our own sales representatives call on our customers and 'prospects' we expect them to be accorded a courteous hearing, we desire to afford one to you.

"Whatever your errand, unless you wish to discuss politics or strikes, this company expects you to be greeted politely, pleasantly and promptly by everyone with whom you come in contact here. When time is short or callers numerous the usual preference will be shown those from out of town.

"If you have something to sell which does not fall in the usual channels of a purchasing department, ask at the information desk to the left at head of stairs. Please go there first anyway. Thank you for your call. We hope it may be profitable to us both."

That sort of attitude is not merely merciful—it is profitable to the company which adopts it. Salesmen of equipment and supplies have dollars-and-cents information for the industrialists they call on. The latter, instead of setting up resistance to their calls, should make every effort to insure getting 100% value from them.

NEWS OF THE MONTH

Print Cloth Mills To Drop 3rd Shift

Elimination of the third shift by print cloth mills, to become effective July 1, is being hailed today as one of the most constructive moves made by the industry in a long time. While there was some doubt at first that a sufficient number of plants would take part in the program to make it worthwhile, latest reports are that at least 96% of the industry is in cooperation, and that there is a fair chance that the remainder—estimated at 2,600 looms—will come in by July 1. The program, to last for one year, is expected to have a stabilizing effect on both production and prices when business picks up again. From 5,000 to 7,500 employees may be affected, according to W. P. Jacobs, secretary of the Print Cloth Group.

Cotton Mills Take 30-Day Curtailment

In an effort to cope with below-cost prices and heavy inventories, cotton gray goods mills—led by the print cloth group—are in the midst of a 30-day curtailment period. It is estimated that at least 80% of the print cloth mills have closed down completely for 30 days, or are operating on a staggered curtailment schedule which will total that amount within the next two months. The majority of the cotton textile industry (expected to reach 80% of all the mills in the South) is following the lead of the print cloth mills and curtailing for various periods of time, according to W. P. Jacobs, secretary of the Print Cloth Group. Immediate effect of the curtailment announcement, aided by the defeat of the Reorganization Bill and the Federal plans for more pump priming, was to encourage both sales and prices of goods. However, after a week or so, volume of business sloughed off greatly, but prices retained gains averaging $\frac{3}{8}$¢ on standard constructions.

"Wriggle Meters" Test Slumberers

Not only gold fish are on 24-hour view. "Test tube" sleepers have submitted themselves to scientific observation, to determine just how serene are the hours between the sheets. The average sleeper, upon evidence of recording dials attached to the mattress, makes from 24 to 45 shifts of position a night, not to mention the small restless movements that barely wiggle the stylus of the measuring mechanism. The boisterous plowing of restless sleepers makes heavy demands on bedclothes.

"Housewives finally have discovered that it is not when they make their beds but when they buy their sheets that the rest and comfort of their families are determined," declares C. K. Everett, of the Cotton-Textile Institute. "Skimpy sheets upset the soundest sleeper with their wrinkles and rumples; and the tugging, turning and twisting definitely make them wear less long. The bed with modern mattress requires the full-size standard 90 x 108-inch sheet to cover it smoothly and with ample tuck-in."

When pressed by his interviewer, Mr. Everett was finally forced to admit reluctantly that National Cotton Week starts on May 30.

Lawrence Succeeds Nance in TWOC

R. R. Lawrence, formerly president of the North Carolina Federation of Labor and more recently with the Textile Workers Organizing Committee, has been made successor to the late Steve Nance who was regional director of TWOC in the South.

Light blue lettering against a deep blue background distinguishes the poster for the third annual national "Swim For Health Week" which is being held June 20 to 25. The poster will be displayed in department stores, specialty shops, haberdasheries and at hundreds of swimming pools during the week.

Textile Institute Delegates Coming

A delegation of two representatives of the Textile Institute of Manchester, England, will arrive in this country this month. The delegates include Frank Nasmith, managing director of the Universal Winding Co. in the United Kingdom, and just elected president of the Textile Institute for the coming year; and J. R. S. Goodall, of the Imperial Chemical Industries, Ltd., and chairman of the Diplomas Committee of the Institute.

The purpose of the delegation is to contact the American members and the various textile organizations in this country who are interested in research and testing with a view to developing closer cooperation between the English society and similar American organizations. They wish also to test out the sentiment of American members with regard to the organization of an American section and to study the possibility of instituting the examination system for the diploma for Textile Technologist, which distinction has attained recognition throughout the world.

Arrangements for entertaining the delegates are in charge of a provisional committee of American members of which Harold De Witt Smith of the A. M. Tenney Associates is secretary. The members of the committee are as follows: Herbert J. Ball, Lowell Textile Institute; William H. Cady, U. S. Finishing Co.; R. L. Chisholm, Universal Winding Co.; Daniel E. Douty, U. S. Testing Co.; Franklin W. Hobbs, Arlington Mills; A. R. Olpin, Kendall Mills; B. Parsons, Pepperell Mfg. Co.; Harold De Witt Smith and Ashton M. Tenney, A. M. Tenney Associates; Douglas G. Woolf, editor, TEXTILE WORLD.

Research Institute Meets May 24

U. S. Institute for Textile Research will hold its annual meeting, adjourned from Nov. 12, 1937, on May 24, 1938, at Hotel Pennsylvania, New York. Business includes report of acting-president Killheffer, action on proposed revision of by-laws and election of officers.

At luncheon following the meeting the Institute will entertain Frank Nasmith, president of the Textile Institute, Manchester, England, and J. R. S. Goodall, chairman of the

diplomas committee of that organization, who will be on official visit to this country at that time.

In the afternoon the cooperators in the textile drying research will hold their first conference since program was started. W. E. Emley will preside.

Georgia Program

The 38th annual convention of the Cotton Manufacturers Association of Georgia will be held May 19 and 20 at the Cloister Hotel, Sea Island Beach, Ga. Guest speakers will include Gov. E. D. Rivers, of Georgia, John C. Gall, general counsel of the National Association of Manufacturers, and the Rev. Pierce Harris, of Jacksonville, Fla.

Textile School Deans Meet

The deans of the 12 textile schools held their semi-annual conference at Southern Pines, N. C., Apr. 22 and 23.

Dr. A. H. Williams, of the Wharton School of the University of Pennsylvania, discussed the four text books on textile economics which have been prepared under the sponsorship of the Textile Foundation. He presented one of the finished books. The titles are: "The Textile Industries—An Economic Analysis"; "Management of a Textile Business"; "Textile Costing—An Aid to Management"; and "Textile Marketing." These may be purchased through the office of the Textile Foundation, Commerce Building, Washington, D. C.

A series of technical text books has been prepared, by H. H. Willis of Clemson College, for use in textile schools. These are entitled: "Cotton Carding," "Cotton Picking," "Roving Frames," "Drawing Frames," and "Cotton Spinning." They may be procured through Dr. Willis at Clemson College, S. C.

Textile executives who attended the conference and discussed "What the Mills Expect from Textile School Graduates" were C. S. Tatum, Pilot Cotton Mills, Raleigh, N. C.; Sidney S. Paine, Tarbardrey Mfg. Co., Greensboro, N. C.; and Carl R. Harris, Erwin Mills, Durham, N. C.

Frederick M. Feiker, director of the educational program for the Textile Foundation, expressed the regret of the members over the illness of E. T. Pickard, secretary of the Foundation, under whose leadership this textile education movement has progressed. In attendance at the meeting were Franklin W. Hobbs and Stuart W. Cramer, chairman and treasurer, respectively, of the Foundation; and William M. McLaurine, secretary of the American Cotton Manufacturers Association.

Group of fabrics made from "Teca," the new crimped acetate rayon staple developed by Tennessee Eastman Corp. Properties of Teca cited by A. M. Tenney Associates, sales representatives for Tennessee Eastman, include the following: The fiber looks and feels like wool and has a wool-like resiliency; the crimp is permanent, not being affected by heat, water, or steam; the number of crimps per inch varies with the fineness of the staple, similarly to wool; the fiber is available in semi-dull and dull types, in lengths ranging from ¾ to 9 in., and in sizes of 3, 4, 5, 8, 12, 16, and 20 denier; dyeing is carried out with the usual acetate colors, usually in top form; black spun-dyed Teca is also available; fabrics made from the fiber have a wool-like appearance and handle; the fabrics are said to be resistant to creasing, wrinkling, and felting and to have little tendency to shrink; preliminary tests indicate that Teca fabrics are similar to wool goods in their thermal insulating properties; the fabrics can be napped satisfactorily and various deniers can be blended to give variation in nap; resistance to abrasion is reported to be very good. Among the uses which have been suggested for Teca, either alone or blended with cotton or other fibers, are included men's and women's suitings, blankets, shirtings, necktie fabrics, floor coverings, and knitting yarns.

Combed Spinners Holding Wages

A vigorous appeal to its members to resist temptation towards wage cutting was made by the Southern Combed Yarn Spinners Association in a recent issue of its *King Cotton Weekly*. The association reported, as the result of a complete survey, that not a single mill contemplated wage reductions, and with one exception none had reduced wages since the 1936 increase. "It is with extreme gratification that we are able to report that 99% of our group is now standing fast on wages and plans to continue to do so," states the bulletin.

To Revise Yarn Rules

A committee will be established to work on the revision of the Cotton Yarn Rules, recently proposed jointly by the Southern Combed Yarn Spinners Association and the Carded Yarn Group. The reason for this decision to revise the rules was the fact that the necessary 80% support has not yet been secured by the Carded Yarn Group. This group has secured the support of 1,304,750 spindles out of the required minimum of 1,700,000 spindles. The Southern Combed Yarn Spinners Association, which had nearly reached its quota, will suspend solicitation for the balance until after the revision—and will cooperate with the Carded Yarn Group in that revision.

S.T.A. To Meet At Blowing Rock

The annual convention of the Southern Textile Association will be held June 17 and 18 at Mayview Manor, Blowing Rock, N. C. Details of program have not been announced.

Worth Street Fair

Worth Street will have its own Merchandise Fair in July or August—the event to be held in the Merchants Square Building, 40 Worth Street, New York. Plans call for

new merchandise to be brought to the fore in connection with the Fair. Worth Street will also hold "open house" during the period—and entertainment and educational features will be part of the general program. The idea has the support of leading merchants in the district.

Two Appeals Pending In "Ringless" Suits

Final determination of the legality of Charles A. Kaufman's "ringless" hosiery patents in the United States and Canada was still a long way off, this month. Following invalidation of the patent in the Exchequer Court of Canada, March 22, plans were started for an appeal, and by the middle of April preliminary legal steps had been taken to carry the case to the Supreme Court of Canada. It is possible that that court may not reach the case before fall. Meanwhile, the battle over United States rights is due to come before the U. S. Circuit Court shortly.

Hosiery Workers Meet at Charlotte

That the annual convention of the American Federation of Hosiery Workers, which opened May 2, in Charlotte, N. C., was really planned as an effort to make peace with Southern hosiery manufacturers, was the claim made by union leaders. The convention, which was interpreted as the opening gun in an effort to unionize the southern hosiery industry, brought together some 300 representatives of hosiery locals from all parts of the country.

Cottons Experience Brief Activity

During ten vigorous days in mid-April, more than 120,000,000 yd. of print cloth changed hands at gradually increasing prices which totaled 3/8c. advance on standard constructions. This improvement was brought about by plans to eliminate third-shift among print-cloth mills, by the 30-day curtailment program, by Washington developments, etc. Yet all of this was insufficient to keep the gradually slowing market from slipping back into a lethargy as the month advanced. Prices, however, held their gains. Yarn prices were fairly stable, with a slight strengthening toward the close as some of the larger producers refused to sell at offered prices.

For Scientific Research

At a meeting of the directors of the Textile Foundation, it was decided to concentrate future work in scientific research on studies of those fundamental problems which are basic to the entire industry. To this end, allotments of funds have been made on a long time basis, and a group of advisers has been appointed to plan and establish the scientific research program. A large part of this work will be done at the National Bureau of Standards, but certain fields have been set aside for Lowell Textile Institute, Massachusetts Institute of Technology and Yale University.

Vinyarn Still in Experimental Stage

Recently reports have appeared in the daily newspapers of the production by Carbide & Carbon Chemicals Corp., of a new type of synthetic yarn, called Vinyarn, made from vinyl resins. It was stated on good authority this development is still in the experimental stage, that no authorized data on the properties of the yarn have been released, and that the reports which have appeared are inaccurate in certain particulars.

Wage Cuts in Wool Goods Mills

American Woolen Co. has reduced wages to salaried employees by 10% effective May 1. A similar cut among mill employees was reported to be impending. Other wool goods mills which have posted wage cuts of 10 to 12½% include Uxbridge Worsted Co., Wanskuck Co., Dunn Worsted Co., Putnam Woolen Co., Hayward-Schuster Mills. On the other side of the picture is Warrenton Woolen Co., Torrington, Conn., which has just signed at TWOC agreement including a 5% wage increase.

Women's Wear Resume Discounts

With the opening of the fall season on women's wear fabrics, market leaders have announced a return to discount basis of price quotation to replace the terms of 1% 10 days net 60 previously the rule. The generally accepted terms are 10% 10 days or 9% 60 days. Five months ago women's wear mills gave their customers choice between net and discount terms, and since most buyers chose the latter, it was decided to quote prices subject to the discount at fabric openings, rather than quote net prices, and refigure them all to include the terms when quoting them to buyers. One large women's wear manufacturer is quoting on the basis of 6% 10 days, 60 extra. Cloak and suit houses arguing that they sold on discount terms, have long been urging women's wear sellers to return to such a selling basis.

Phi Psi Meets

Phi Psi, the national professional textile fraternity, held its 35th annual convention May 6, 7, and 8 at the Hotel Pilgrim, Plymouth, Mass. Approximately three hundred alumni and student members, including national officers and delegates from the nine active chapters representing the leading textile schools, were in attendance.

Hosiery Sales Near March 1937 Peak

Hosiery shipments in March, 1938, were 19.5% above the preceding month and only 3.8% below the peak month of March, 1937, according to figures announced by the National Association of Hosiery Manufacturers. March, 1938, shipments totaled 12,076,842 doz. pr. against 10,108,630 doz. pr. in February, 1938. The rise was most noticeable in women's full-fashioned hosiery, where shipments totalled 4,038,887 doz. pr. in March, 1938; this figure is 23.6% above February, 1938, 19.9% above the "normal" seasonal change, and 6.2% above March, 1937.

All 3 Knit Goods Markets Sluggish

While spurts of buying were reported intermittently from various areas, it could not be said that the knit goods market was anything more than sluggish at the beginning of May. Oddly enough, despite the lack of business, market morale appeared to be good. Hosiery mills in the South reported activity, but business in N. Y. and Pennsylvania was slow; underwear trade was quiet, and this applied both to spot and the fall lines; for all their loyal support of the approaching "Swim for Health Week," outerwear manufacturers reported a backward situation on summer business as a result of which many firms are curtailing output.

Better Tone in Wool Goods

From numerous quarters came reports during April that wool goods business was showing improvement. In the earlier part of the month sellers believed that buyers were gaining conviction that prices were stabilized; at the close of the month, however, wage cuts in wool goods mills made buyers again skeptical despite sellers argument that lower wage levels had been anticipated in opening prices.

Perhaps some of the bolder merchandisers will feel disposed to advance prices before long, a move which might substantially benefit the industry in view of stronger raw wool.

Wool tops held steady through April, closing the month at a slight gain over the opening. On the exchange volume was moderate, fluctuations narrow.

Favor Lisle Hose

Out of 51 stores which were questioned by the Durene Association of America regarding the marketability of lisle hosiery, 67% reported that they would continue actively promoting lisles during the summer. Asked whether customers could be expected to buy 2 to 3 pairs of lisle hosiery yearly, the vote was 22 "yes" and 24 "no"; the stores were strongly against either knee-lengths or pastel shades in lisles.

Rayon Tone Better

Post-Easter brought a slight rise in demand for rayon yarns, chiefly the viscose for pigment taffetas, and producers were hopeful that this pick-up might prove of some duration. Interest was not strong enough to offer hope that the month's volume would exceed that of the previous four weeks. However, weavers were in the market for moderate quantities of both 100s and 150s, which, with continued call for acetate and staple, served to brighten the outlook. Call for cuprammonium yarn held very strong.

Rayon production in first quarter of 1938 totalled 57,500,000 lb., which was 25% below the same quarter last year, the *Textile Organon* announced this month.

Silk Gains Steadily

The firmness noted in raw silk last month was maintained through most of April, and importers talked a bit more optimistically of the outlook; at times during April spot demand was so active that importers had difficulty in making shipments. Crack double extra 13/15 white, 78%, which closed at $1.52½ on March 23, had crawled up to $1.54½ by April 20. Hosiery mills, which had held back of late, were fairly active in covering both for nearby and future requirements.

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Besse Scores Fabric Bill Provisions

Arthur Besse, president, National Association of Wool Manufacturers, presented a forceful and logical brief opposing Fabric Labeling Bill, HR 9909, before a congressional committee May 4. He argued that the "virgin"-"reclaimed" distinction proposed was not enforceable because no such distinction can be made by any analysis of a wool product. Further, he argued, if there is no discernible chemical or physical difference between new and reworked fiber in a wool fabric, there can be no advantage to consumers in attempting to make a distinction.

Ribbon Rules

Fair trade practice rules for the ribbon industry were approved at a trade practice conference held April 14 in New York, under auspices of the Federal Trade Commission. Following the meeting steps were taken to clarify certain amendments which had been proposed.

30-Day Basis for Silks?

Adoption of the 30-day terms for the rayon greige goods industry, recently announced by the rayon manufacturers may soon be duplicated by the silk textile industry. Mills specializing in silks are studying the situation with a view to similar action, it is reported. The rayon mills decided to tighten up on credit in the hope of thus curtailing speculation among converters.

TEXTILE WORLD ANALYST

TEXTILE WORLD'S index of textile mill activity for the first quarter of 1938 was 39% below that for the first quarter of 1937, but only 18% below the corresponding period of a "normal" year (1924-31 average). Of the individual fibers, wool showed the greatest decline from last year, 58%; rayon next with 40%; cotton third with 35%; while silk, with a decline of 25%, was the best performer in relation to 1937. The latter was due to the fact that full-fashioned hosiery has been in a better position thus far this year than most other branches of textiles.

TEXTILE WORLD'S compilation of manufacturing margins in carded cotton fabrics and yarns showed only minor change in April, both being slightly down from March. (Tables I and II.) **TEXTILE WORLD'S price index numbers** for April showed very slight declines in some items in the cotton and wool groups, and no change in the silk and rayon groups. The only item on which there was more than a minor drop was wool cloths, due to the fact that reductions made the previous month (March) did not have their full effect on this index number until April.

Textile World's Price Index Numbers

STARTING with January, 1936, TEXTILE WORLD has revised its price index numbers to a 1923-25 base, to correspond with current statistical practices. Figures on cotton manufactures, Aug. 1, 1933 to Jan. 6, 1936 include processing tax.

	Cotton Index Numbers				Wool Index Numbers				Silk Index	Rayon
Date	Cotton	Yarns	Gray	Colored	Wool	Tops	Yarns	Cloth	Raw-Silk	Index
1923-25	100	100	100	100	100	100	100	100	100	100
1930 ave.	50	61	61	72	58	61	72	90	109	46
1931 ave.	32	68	46	59	46	49	59	71	32	32
1932 ave.	24	37	37	60	36	40	52	57	21	28
1933 ave.	39	56	55	50	53	59	62	80	21	26
1934 ave.	61	67	70	62	63	70	75	91	17	25
1935 ave.	60	68	67	69	56	58	70	88	22	24
1936 ave.	45	63	63	68	72	78	76	93	23	25
Jan. 1936	48	67	63	68	67	73	75	93	26	24
Feb. 1936	42	62	58	67	72	81	77	93	24	24
Mar. 1936	42	61	57	66	73	81	77	93	23	24
Apr. 1936	43	60	55	64	68	75	76	90	22	24
May 1936	43	57	54	64	67	75	76	90	21	24
June 1936	44	58	57	65	67	75	76	90	20	25
July 1936	48	61	61	70	69	75	75	90	22	26
Aug. 1936	45	62	63	70	70	75	74	90	23	26
Sept. 1936	45	62	63	70	70	75	74	90	22	26
Oct. 1936	45	64	67	71	71	75	74	92	23	26
Nov. 1936	45	65	74	72	78	82	76	100	26	26
Dec. 1936	48	72	80	74	87	90	84	105	26	26
1937 ave.	42	65	67	74	79	82	85	107	25	27
Jan. 1937	48	73	81	76	90	93	88	108	27	26
Feb. 1937	48	74	78	76	90	92	90	108	27	26
Mar. 1937	53	78	80	78	87	88	90	112	27	26
Apr. 1937	53	80	82	80	84	86	90	112	27	27
May 1937	**49**	**75**	**76**	**78**	**82**	**84**	**89**	**112**	**24**	**27**
June 1937	**47**	**70**	**71**	**78**	**78**	**82**	**88**	**112**	**25**	**27**
July 1937	**45**	**65**	**67**	**78**	**78**	**82**	**88**	**112**	**26**	**27**
Aug. 1937	**37**	**59**	**62**	**78**	**80**	**82**	**88**	**112**	**25**	**27**
Sept. 1937	**33**	**54**	**56**	**73**	**78**	**81**	**87**	**107**	**25**	**27**
Oct. 1937	**31**	**51**	**53**	**67**	**73**	**76**	**82**	**100**	**23**	**27**
Nov. 1937	**29**	**48**	**50**	**61**	**66**	**68**	**74**	**97**	**22**	**27**
Dec. 1937	**30**	**47**	**49**	**60**	**60**	**64**	**70**	**97**	**21**	**27**
Jan. 1938	**32**	**47**	**49**	**62**	**57**	**63**	**68**	**97**	**21**	**26**
Feb. 1938	33	47	50	62	53	60	67	97	22	23
Mar. 1938	33	47	50	62	51	58	66	88	22	23
Apr. 1938	32	46	49	62	51	57	66	80	22	23

Key wool prices with usual comparisons follow:

	May 2, 1938	April 1, 1938	May 1, 1937	May 1, 1936
Fine and fine med. territory	$0.63	$0.63	$1.02	$0.81
Ohio ⅜s	.27	.27	.47	.37
Tops fine 64-66s	.89	.88	1.28	1.05
Average ⅜s	.73	.73	1.10	.96
High ⅜	.65	.68	1.03	.89
Noils, fine	.58	.58	.83	.68
½	.43	.45	.62	.53
2-40s 60s wstd yarn	1.35	1.35	1.85	1.55
2-32s 56s wstd yarn	1.15	1.15		
8020 serge	1.65	1.65	2.27½	1.95

Current statistics on wool consumption and mill activity:

	March (4 weeks)	February (4 weeks)
Wool consumed, clean equiv.		
Apparel wool, lb.	10,412,000	12,092,000
Carpet wool, lb.	4,328,000	3,984,000
Machinery activity (40-hr. shift)		
Looms (50-in. and wider)	53.8%	70.0%
Carpet looms	45.3%	43.2%
Combs	53.0%	63.6%
Worsted spindles	34.1%	45.6%
Woolen spindles	56.9%	76.3%

Key rayon prices and statistics follow:

Prices	May. 2 1938	April 1, 1938	May 1, 1937	May 1 1936
Viscose process				
75 denier (18-30 fils.)	$0.77	$0.77	$0.93	$0.90
100 denier (40 fils.)	.71	.71	.82	.79
150 denier (40 fils.)	.54	.54	.63	.57
Acetate process				
150 denier	.54	.54	.63	.60
Cupra. process				
150 denier (112 fils.)	.54	.54	.68	.65
Rayon staple, 1½, 3 and 5½ denier viscose	.25	.25	.28	....

Indices of Deliveries*

Statistics**	April	March	Feb.
In year 1938	444	456	493
In year 1937	702	693	721

* Rayon Organon. Covers 100% data for all processes 1923 to date. Note that acetate is now included. Shipments index for all rayon 1923-25 = 100.

Key silk prices and statistics follow:

Prices	May 2, 1938	April 1, 1938	May 1, 1937	May 1, 1936
Crack XX 13/15 wh. 78%	$1.63½	$1.45½	$1.80½	$1.71½
Tram, 5thd Japan 85%	2.32	2.25	2.72	2.33
Tram Crack XX 78%	2.24	2.17	2.46	2.25
60s-2, spun silk	3.15	3.15	3.15	2.85

Statistics	Imports	Approximate deliveries	Stocks at warehouses
April, 1938	38,510	33,381	41,455
March, 1938	27,376	34,884	36,326
February, 1938	25,416	30,260	43,834

Fabric and yarn manufacturing margins follow:

TABLE I. CARDED FABRIC MARGIN

Date	Margin in cents	Date	Margin in cents
August, 1933	21.4	June, 1936	15.3
October, 1933	19.1	May, 1936	14.3
January, 1934	18.4	July, 1936	16.9
April, 1934	17.6	August, 1936	18.0
July, 1934	15.5	September, 1936	18.4
August, 1934	16.6	October, 1936	21.2
September, 1934	18.6	November, 1936	25.4
October, 1934	17.4	December, 1936	28.1
November, 1934	15.8	January, 1937	28.6
December, 1934	16.2	February, 1937	26.2
January, 1935	16.2	March, 1937	25.6
February, 1935	16.0	May, 1937	23.1
March, 1935	15.9	June, 1937	21.2
April, 1935	16.1	July, 1937	20.1
May, 1935	16.0	August, 1937	19.4
June, 1935	16.5	September, 1937	18.1
July, 1935	15.2	October, 1937	17.3
August, 1935	17.1	November, 1937	16.9
September, 1935	17.9	December, 1937	15.7
October, 1935	17.7	February, 1938	16.2
November, 1935	16.4	March, 1938	16.1
December, 1935	16.2	April, 1938	15.9
January, 1936	17.2	Apr. 6	15.6
February, 1936	16.5	Apr. 13	15.8
March, 1936	15.5	Apr. 20	16.2
April, 1936	14.3	Apr. 27	16.0

TABLE II. CARDED YARN MARGIN

Date	Margin in cents	Date	Margin in cents
August, 1933	23.5	June, 1936	14.6
October, 1933	20.0	July, 1936	15.0
January, 1934	18.3	August, 1936	16.5
April, 1934	15.9	September, 1936	16.5
July, 1934	14.6	October, 1936	17.2
August, 1934	15.3	November, 1936	18.0
September, 1934	15.6	December, 1936	20.6
October, 1934	14.6	January, 1937	20.8
November, 1934	13.3	February, 1937	21.2
December, 1934	13.5	March, 1937	21.3
January, 1935	13.5	April, 1937	22.6
February, 1935	13.9	May, 1937	21.2
March, 1935	14.4	June, 1937	19.3
April, 1935	14.1	July, 1937	17.8
May, 1935	13.8	August, 1937	17.2
June, 1935	14.5	September, 1937	16.1
July, 1935	14.3	October, 1937	15.3
August, 1935	15.3	November, 1937	14.7
September, 1935	15.4	December, 1937	13.7
October, 1935	15.8	January, 1938	13.5
November, 1935	16.3	February, 1938	12.9
December, 1935	16.3	March, 1938	12.9
January, 1936	18.4	April, 1938	12.7
February, 1936	17.5	Apr. 6	13.0
March, 1936	16.3	Apr. 13	12.4
April, 1936	15.6	Apr. 20	12.8
May, 1936	14.8	Apr. 27	12.7

Key cotton prices with usual comparisons follow:

	May 2, 1938	April 1, 1938	May 1, 1937	May 1 1936
Spot Cotton, N. Y.	8.67	8.63	13.41	11.61
Ditto, high previous month	9.03	9.27	15.17	11.88
Ditto, low previous month	8.44	8.60	13.26	11.55
10s hosiery cones	17½	17½	32	23½
10s/2 carded skeins	18	18½	31	23
20s/2carded peeler warps	22	21½	35	25½
60s/2 combed peeler warps	47½	48½	66	52
60s/2 mercerized cones	63	63	79	51
37 in., 3-yd. drill	6⅜	6½	11½	8½
38½-in. 64x60s	4½	4½	7 7/16	5 9/16
36-in. 4-yd. 56x60s	5 1/16	5⅛	9½	6¾
Denim, 2.20s	11	11	16	13

Statistics of particular interest to cotton manufacturers concerning operation and the raw material situation:

	March	Feb.
Spindle activity (% capacity)	101.1	98.9
Spindle activity (millions of hours)	6,485	5,558
Cotton consumed (bales)	510,941	427,528
Cotton exported (bales)	426,000	399,000
Cotton imported (bales)	14,000	18,797

Rayon fabric shipment index reported by the National Rayon Weavers Association and the National Federation of Textiles, follows:

1934=100	Mar.'37	Feb.'38	Mar.'38
Taffetas, twills, linings and other staples	310	183	189
Dress goods, novelties and other fancies	100	79	85
Total	172	113	120

THE OVERSEERS' CORNER

Ambition vs. Complacency

PETE came storming into Bill's office at the mill one morning.

"I give up!" he said bitterly, "That young John Smith in my department is hopeless. He just doesn't seem to want to get anywhere."

"What's the matter with him?" asked Bill.

"Well, he's perfectly capable of running a better job, but he won't put out enough extra effort to learn it. Old man Jones is out sick this week, and I've got to send out for a special man to come in and handle his work. I have suggested time and again for John to start learning the old man's job; that he couldn't last much longer. So far, he hasn't done anything about it."

"Why don't you fire him?" suggested Bill, questioningly.

"There are a number of reasons. He hasn't much education, but he's alright where he is as far as that job is concerned. Then he has a wife and small child who depend on his earnings. And finally, he's one of the most popular young fellows in the community."

"I like for 'em to stay on one job," said Bill. "Too much ambition causes trouble. Remember that young textile school fellow who was in my department for a while? He never was satisfied with the way things were going. Always sticking his nose in somebody else's job. Give me a complacent one any day!"

"I don't mean I want employees to make a nuisance of themselves," patiently explained Pete. "I just dislike having to prod those young fellows who are capable of getting ahead, and yet who don't do anything about it."

"You're just asking for trouble, Pete, when you start making people think they can be big shots. Look how smoothly my department runs. That's because I weed out people who want to get ahead, and keep an even, contented fellow on one job for a lifetime. It saves training new workers too."

"Well I don't run my department that way," said Pete, vociferously. "I want my employees to better themselves, if they can. Nobody but a cranky old reactionary like you would feel that way!"

Are ambitious employees better for the mill than complacent employees? How would you incite ambition in John Smith and other young men like him?

Letters from Readers

On Passing the Buck

Editor, Overseers' Corner:

One organization, of which I was once a member, has a system of preventing "buck-passing" that is ideal. The duties of every operative, from the sweepers to the section men, are typed on a guide sheet posted on the bulletin board outlining the duties of each work day. These listed all operations, such as frequency of cleaning, doffing, oiling; inspection of cupboards, oil tanks, top rolls, gears; tightening of couplings, certain detailed set screws and pulleys, belts; scouring, etc. These guide sheets are typed, framed, and posted as near the center of each man's job as can be arranged, and consequently the employees are constantly reminded of their expected performances. Of course there are certain changes that come about. Minor operations are filled in by the overseer, or he has new guide sheets typed replacing the old ones. Some fight the practice of posting such schedules, but believe you me it is a boon to good management if used consistently. In another plant no order is given without first putting it in written form. The caption on the order blanks is: "Verbal Orders Don't Go! Write IT." This is another means of lessening passing the buck.

LOMAR FOGLE
(*South Carolina*)

Praises Foremanship Article

Editor, Overseers' Corner:

The main article appearing in the Overseers' Corner in the March issue of TEXTILE WORLD, "The Foreman Finds His Place", by William G. Ashmore, southern editor, should be read by every foreman and second hand in the industry. When the foreman really 'finds his place' many of our labor troubles will be diminished. The time has also come when our textile graduates would do well to make their aim a position as assistant foreman or foreman. We are afraid that many of them have set their stakes too high, and the loss has been their own. Far be it from us to criticize a young man who has ambitions to become a superintendent, but all cannot be superintendents. And besides the day has come when the overseers and the second hands are finding their places in the industry, and their positions are being recognized as being of major importance.

L. P.
(*Alabama*)

Stretch-out Article Comments

Editor, Overseers' Corner:

The very recent article on the stretch-out, so called, is a subject of deep general interest, and it is a privilege and a pleasure to accept your published invitation to offer a few comments on this problem.

As the author of this article points out, this stretch-out is of two distinct types—labor and machine. As far as machine stretch-out is concerned, such as long-drafting, high-speed combers, single-process picking, etc., I am strictly in favor of it. Not as a mill man, but as a consumer.

The real need today in the industry, is fair quality cotton goods turned out in such volume as to be put into retail channels at a low price. This will create a big demand for such goods, and return the industry to a paying basis. This must not be done at the expense of the mill earnings, as any enterprise is worthy of a fair return but must be accomplished through the instal-

CONTRIBUTIONS to "The Overseers' Corner" are paid for without regard to length. We will use letters discussing the material on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute kinks or practical helps will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. If these pages interest you — contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42d St., New York.

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lation of better equipment and common sense management.

When it comes to stretch-out of work loads for the individual, that is another thing entirely. Good management calls for an even distribution of work loads so that each operative will turn out a fair amount of work for a fair amount of compensation. No worker has the right to expect something for nothing, and no employer has a right to expect his help to produce in excess of a normal physical capacity.

During the past seven or eight years, I have seen the work piled onto some of the operatives until it got to the point where it was a downright shame. However, some of this pressure was relieved during recent years.

But in several instances during this period conditions were reversed. The help seized the opportunity to retaliate through various organization activities, etc., so it turned out to be a case of dog-eat-dog once more.

It would be a real treat to live, to see the day when some truly intelligent representatives of labor could meet with the same type of manufacturers, and arrive at fair, equal standards for the industry as a whole. But after all, we are not yet in Utopia.

C. C.
(*New Bedford, Mass.*)

More About Rolling Cafeterias

Editor, Overseers' Corner:

In your February issue you published an article, "Rolling Cafeteria Creates Good Will." I want to say I know Mr. Heller has a good idea expressed in this article, but I would like to carry it on a little further.

In this day and time of shorter hours and high wage rates we all have to do everything we can to increase efficiency and keep costs and seconds down. Most of us have been paying too much attention to machinery and losing sight of the fact that machine efficiency depends a lot on the efficiency of the person operating it.

Quite a number of mills are running two 8-hr. shifts with no stops for lunch hour or rest. In other words, we start at 6 o'clock in the morning and run straight through until 2 o'clock, change shifts and run from 2 o'clock until 10 o'clock at night with no stops. Consequently the employees are up at 5 o'clock in the morning, dress and have a hurried breakfast about 5:30, and rush to work. Sometimes they are late getting up and it is cold, so they just dress and rush to the mill without breakfast, saying to themselves they will get a sandwich and Coca Cola from the drink stand. We all realize this is not enough nourishment for 8 hr. of work.

To prove my point, make the following tests in your own plant and be your own judge. Pick out 10 or 12 of your good weavers and check their loom stoppage from 8 to 10 o'clock in the morning, then make another check from 12 to 2 o'clock. Do this for a number of days and then check the reports to see if their efficiency is as good from 12 to 2 o'clock as it was from 8 to 10 o'clock. If you will merely watch the weavers going about their work you will note they get slower as the day goes on.

Therefore I believe if we would make it convenient for the employees to have something *hot* to eat and drink during their working hours we would increase their efficiency, help them to retain their health, and create good will toward the company. In other words have your cafeteria or drink stand equipped not only to serve cold drinks and cold sandwiches, but also to have hot coffee, soups, and hot sandwiches, such as egg, ham, steak, etc. The employees will like this idea and you will increase the income and profit of your cafeteria.

Healthy, well-satisfied employees are just as necessary to operate a mill as up-to-date machinery.

Joe C. Cobb
(*South Carolina*)

Changing the Scope of Responsibility

Editor, Overseers' Corner:

One of the greatest causes of internal friction in an organization that can possibly be found is the promiscuous changing of responsibilities. It is only as definite and clean-cut responsibility is relegated to each position that real management may be said to exist. If there is vacillation in any sense, it naturally follows that real management cannot be maintained. While there is too much change in this direction in the average establishment, it cannot be denied that changes are at many times necessary to the continued welfare of the industrial setup. But every change that is decided upon will need to be carefully studied beforehand, in order that it may be clearly defined and well explained to everyone concerned. If there is a question as to which one of two men is in authority in a given sphere, it is the most natural thing in the world for subordinates to yield obedience to that one of the two whom they like most. This can lead nowhere except into confusion.

J. E. H.
(*Illinois*)

Overseers' Practical Helps

Picking Out Slugs

SOME MILLS still retain hand pickers for various types of weaves, especially on the better grade cloth. Even though the cloth is first run through the mechanical picking machine, the cloth is afterward gone over by hand pickers to patch up certain defects the mechanical picker cannot remove. One such defect is the slugs woven into the cloth, creating a lumpy appearance. Here is a method of removing these slugs which may be unknown to some, and also a wetting device which will prove helpful in removing these defects.

Wetting Device for Hand Pickers

The sketch shows the device, made from a 1-lb "hand soap" can. A lip is cut from the top of the can close to the edge and an ordinary lamp wick is forced through, fitting tightly. The can is filled one-third full of water, gasoline, or alcohol, according to the liquid desired. When using, the picker swabs the defect with the liquid by pressing the outside portion of the wick down upon the slug. The wick is very wet and usually one swab will suffice for wetting. In removing the slug the picker point is inserted into the wet slug

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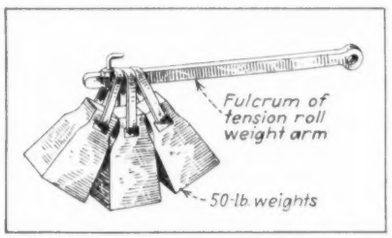
and carefully pried upwards or outwards along the weave of the filling, so as to disturb the weave as little as possible. After the slug is pulled out, the filling is cut in such a manner that each end of the severed yarn is about 1/8 in. longer than it should be. When finished this end makes a slight kink, preventing a star. Brush the filling and warp yarns in correct position while the cloth is wet.

O. L. P.
(*Pennsylvania.*)

Safety Device for Beamers

IN A RECENT safety inspection in the beaming room of our mill it was noticed that on certain beamers three or four large weights were hung at the ends of the tension roll weight arms, these weights being necessary because of the heavy goods being run. It occurred to the committee that these weights, hung in the manner that they were, with nothing to keep them from falling



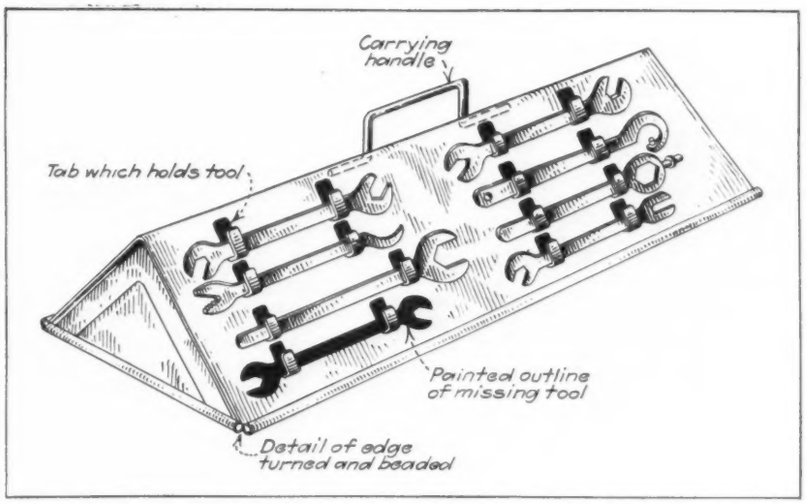
Safety device to prevent weights from falling off beamers

off, constituted an accident hazard. As shown in the accompanying sketch, we eliminated this hazard by drilling a hole in each arm, and inserting and securely bolting on a 1/4 in. rod threaded and bent to form a hook.

L. P.
(*Alabama*)

Portable Tool Carrier

There are always a few empty 5-gal. oil tins or containers about the mill that can be converted into many useful things, and one of these is a tool carrier, as shown in the sketch. The can is cut carefully across the diagonal, and a little turned in and beaded over the edge to stiffen the carrier. Tabs are cut out in the locations desired, and the special set of tools or wrenches is mounted by bending these tabs as shown. A handle for carrying is made of suitable round rod and inserted in holes in the apex, after



A 5-gal. oil tin, cut on the diagonal, makes a handy tool carrier

which the under part is bent right and left to distribute the support. The carrier is neat and light, and constructed in a way that permits tools to be carried to the job or kept in sight at the work bench. An outline of each tool painted on the face of the carrier indicates plainly when any tool is missing. The device saves a great deal of time which ordinarly is spent searching for tools.

C. H. W.
(*New Hampshire*)

Cleaning Beams and Shafting With Compressed Air

"IN ONE OF OUR plants an employee was blowing lint cotton from overhead beams, shafting and pulleys. To reach the lint, employee was using a length of hose fastened to the end of a pole about 7 ft. long. He was holding the pole above the left side of his chest and the end of the pole came in contact with a revolving pulley. The pulley drove the pole downward causing the lower end of the pole to strike the employee on his chest, resulting in a severe chest contusion and fracture of two ribs.

"While discussing this particular accident, mention was made of another case outside the company when a pole pierced the left side of chest of an employee. He was killed.

"It is recommended that overhead pulleys and shafting be cleaned when not in motion. If it is absolutely *necessary* to clean such equipment when it is in motion, it should only be done on the safe side of the shaft; that is, on the side where pulley will be running away from end of hose. The pole should be of sufficient length with hose extending eight or ten inches beyond end of pole. Under no conditions should an inexperienced person be permitted to clean revolving pulleys or shafting, or overhead areas in the vicinity of such equipment by this method".
National Safety Council News Letter.

Questions and Answers

Bars in Satin

Technical Editor:

Inclosed you will find a sample piece of silk and rayon satin, constructed 19,446, 45 5 2 silk warp; 92 picks semi-dull rayon filling. You will find that it has a bar appearance running fillingways. This bar appearance is the same in the entire piece. It also has what appears to be a poor face and is poorly woven. The sample was woven on a 2x1 box loom. The sand drums, take-up gears, and press roll were all carefully checked before starting the warp. A rope let-off was used.

I shall appreciate any information you can give me that will help me to improve the quality of this cloth. Would the bar appearance show after the piece was dyed and finished? (8476)

Examination of the fabric discloses a repeat mark which appears at every ten picks and which gives the bar

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effect. This is a weaving fault and is due to improper timing of the shed or dobby, or to the whip roll being in the wrong position.

We suggest that you examine each jack, jack lever, and jack back-rest to see if they are even; also, the hooks must lie the same distance away from the knife. If these are not even, you are raising your shafts unevenly, which will cause this appearance.

We also suggest that you have your dobby equalized; that is, when the reed is up to the fell of the cloth, the shafts must be even or slightly over front center. This must be the same on both picks; that is, when the shuttle is at home in the double box and when the shuttle is opposite.

Now as to position of whip roll, it has been the tendency in the past when weaving satins to have the whip roll slightly higher than the warp line. But we have found that in weaving this type of cloth if you lower your whip roll at least ¾ in. below the warp line, you will eliminate many difficulties.

Full-Fashioned Sinkers

Technical Editor:

I am enclosing herewith a sinker. You will notice that the sinker is broken at the plate; and also, in rubbing your fingers over the body of the sinker, you will notice that it is worn. I have tried a great many things to correct this fault, but to no avail. I've taken the sinker heads off several machines to examine the slots, but I found them to be in good order. I have been oiling the sinker head and springs every day and have tried having the catch bar in gage, off gage, high, low, and what not; but as yet I have not found the solution. It is giving such trouble as cutting holes, bad selvages, etc. Any suggestion you can give me in correcting this fault will be greatly appreciated (8492)

The breakage of the sinker nibs near the thread-drawing notch is due to repeated bending of the nibs. If the nib is but slightly bent, moving it into and out of a straight slot bends the steel with every course knit. In an instance we know of, the slots on an old machine were worn so they would take two dividing sinkers, and chattering of the sinkers in the slots caused many sinker nibs to break.

The wear on the edges of the sinker blades was caused by the catch-bar being set so low that it rode upon the sinker butts. The blades are so thin, on these fine-gage machines, that they are unable to sustain any weight, and the catch-bar should be high enough so it never rests on the sinkers.

The breakage of sinker butts, and blades at the butts, may be caused by repeatedly crowding the butts against the verge plates by the slur-cocks or the catch bar. The clearance of both ought to be just right at all times. You may think you have the right catch-bar clearance when you turn the machine by hand and measure the clearance, but have you spring tension enough to keep the catch-bar cam rollers from jumping off the cams when you go over the high points in the cams? Or, are the high-point bits high enough above the cam surfaces to cause the rollers to jump when they hit the cam bits? Bumping the sinker butts against the verge plates is certain to cause breakage of sinker blades.

Cotton Carding and Spinning Problems

Technical Editor:

We are running a cotton of about 15/16 in. to 1 in. staple, strict low middling or less, making yarns from 7s to 45½s. Below are several questions we would appreciate your co-operation in answering.

1. Is it good practice to set aside picker laps that are above or below standard weight and try to compensate for this by setting aside groups of cards having different drafts to try to bring them all to the same resultant sliver number?

2. What do you consider to be the heaviest weight of sliver practical to run on a card?

3. Would an extremely heavy sliver be likely to cause uneven work in drawing? What is the best draft to run on the drawing?

4. Which is considered better practice—a high doffer speed and a light-weight sliver, or a low doffer speed and a heavy-weight sliver? In general, which would give the better results? (8523)

1. With pickers in good condition and with stock properly blended, there should be no laps set aside. That was all right ten years ago, but no progressive mill today will stand for this condition. Laps can and should be held to limits of ½ lb. either side of a standard; if there are more than two or three laps out of every hundred which exceed this limit, something is radically wrong. Setting aside sets of cards to run off-weight laps is a costly, unnecessary, wasteful, confusing, and expensive procedure.

2. For ordinary cotton used to produce commercial-quality yarns, 60 should be the heaviest weight of silver practical to run on the card.

3. Unquestionably, yes. Heavy masses, drafted on the ordinary drawing frame, result in an unsatisfactory condition as regards fiber control. There is no satisfactory uniformity or evenness, either as regards staple placement or weight distribution.

The draft depends primarily upon the length of the staple, but under no condition should the total draft exceed the number of ends up in the back. A draft slightly under this number is preferable to one in excess of it.

4. There is a happy medium established both by practice and research. A 55-grain sliver, with a doffer speed of 7½ to 8½, gives good results on ordinary cotton and medium numbers. If quality is no consideration, we would increase the weight of the sliver and try to obtain some quality by slow doffer speed. To a question such as that asked, there is no "yes or no" answer; the material, the condition of the cards, and the use of the yarn are all factors which must be weighed to attain a proper solution.

Woolen-Carding Problem

Technical Editor:

I should like to get an answer to a question that has been discussed here at our plant for some time. Why is it that a certain lot will start on the card and run well in the mule the first day, but after running a day or so will begin to run worse? A 50-yd. skein will break at 100 lb. (3 typp [10 cut, 1.88 run] yarn) the first day and gradually drop to 70 lb. on the third day. The only reasons we can think of are: the card needs stripping more often, or the stock is drying out back of the card.

To help the situation, we changed the stripping schedule from 10 hr. to 8 hr., but it made no difference. The yarn broke no better after stripping than before. (8465)

While you do not state the nature of the blend, we are inclined to think it contains 20% or more of cotton or cotton waste. If this is the case, stripping will not tend to eliminate the trouble you are having. We suggest that you try limiting the size of your lots on the basis of one day's production per set of cards.

In blends of this type it is common practice to make up large lots. The result is that the emulsion completely penetrates the cotton in the blend; and at the end of a day or two the cotton will tend to roll or nep in the card, thereby reducing the breaking strength of the yarn.

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Gaston County Spinners

Discuss problems connected with long-staple cotton and 1937 crop

SPINNING problems connected with long-staple cotton were considered at the spring meeting of the Gaston County Division of the Southern Textile Association, held April 15, in the Community House of A. M. Smyre Mfg. Co., Gastonia, N. C. Marshall Dilling, chairman of the division and executive secretary of the association, presided. Speaker of the evening was Dameron H. Williams, of E. W. Montgomery Co., Inc., Greenville, S. C., cotton merchants.

The first question dealt with the quality of the 1937 cotton crop. Consensus was that it represents the weakest cotton noted since 1931. H. G. Winget, superintendent of Victory Mill, reported a drop in breaking strength and more fly. S. H. Sherman, superintendent of Trenton Cotton Mills, said that he had noticed a 5 to 10% variation in break from day to day rather than a general lowering of breaking strength. He advocated better mixing to improve evenness and spraying with oil to keep down fly. Mr. Dilling cited a laboratory test which shows the 1937 crop to have an excess of immature or dead fibers.

Reporting on the proper amount of twist to put in roving, W. N. Williams, superintendent of Rex Spinning Co., said that he believes the average mill man puts unnecessary twist in roving to stop breaks when the trouble is due to other causes. He advocated using the lowest twist multiple possible and then checking back on skewers, tension, etc., if the work is not running properly.

Consensus was that it is no longer necessary automatically to add twist to spinning with the approach of hot weather if the same cotton is used. This is because crops of today are sufficient to last until the new crop starts moving, whereas some years ago the old crop ran out before the end of summer.

S. M. Cauble, superintendent of Laboratory Cotton Mills, reporting on round-point versus flat-point travelers, said that he has completed a 33-hr. test on 60s. At the end of the test, which was run on 416 spindles under identical conditions, there were 129 more ends down with round points than with square. Square-point travelers in his mill are changed regularly every 480 hr., as compared with 400 hr. for the round point.

The new light-weight spinning tapes came in for quite a bit of discussion, and, in general, were said to give considerable power savings over the old heavier tapes. However, it was pointed out by several members that tests run to date are not altogether conclusive, as no one in the division has compared old regular tapes with new regular tapes and old light-weight tapes with new light-weight tapes. Mr. Dilling said that one of the fairest tests he has seen was made by a tape manufacturer. It showed the old regular tape to require 23.54 hp., new regular tape 21.45 hp., and new light-weight tape 19.36 hp. The new light-weight tape in this test saved 3.13 hp. or 13.90%. J. P. Bivins said that he has been unable to check spindle speeds accurately even with the use of a tachometer and stroboscope. Several members reported spinning-frame motors to drop in temperature upon installation of light-weight tapes.

Mr. Winget complained of soft or weak spots forming in yarn on twisters which stood over the week end, due apparently to contact with the water roll. Several members reported that the best solution, though not perfect, is to raise the roll a few minutes before shutting down the machine for the week end.

T. L. Richey, of Victor Ring Traveler Co., and A. D. Carter, of Gastonia, were asked to discuss twister travelers. Mr. Richey said that more half-round travelers are being made today, as they seem to operate better with slub yarn and spun rayon. Mr. Carter added that rayon and thread mills find the perfect-round traveler advantageous, while the mills on coarser numbers prefer the half-round or oval traveler.

Consensus was that it pays to rework spinning rings if they are not too far gone, although several members said that such a practice is not economical. John W. Long, of Groves Thread Co., asserted that twister rings can be reworked satisfactorily, but that spinning rings cannot.

Marshall Dilling, who presided at Gastonia.

Speaking on the problems which confront a mill in connection with its purchases of raw cotton, Mr. Williams discussed in considerable detail the four characteristics of cotton with respect to classing. These are grade, preparation, staple, and character. The Government, he said, has made great strides in the standardization of these characteristics, especially when one considers that the present methods are not much over 25 years old and that classing is almost entirely dependent on the human element.

The better cotton firms, explained Mr. Williams, are doing everything in their power to give the mills what they want with as few rejections as possible. The most important effort in this direction has been the establishment by the cotton shippers of classing laboratories built according to Government specifications and operated by competent persons. These laboratories have light of a certain intensity, air-conditioning equipment, temperature controls, polarizing microscopes, and numerous types of scientific instruments against which the classers are checked periodically.

The mills can help themselves by: (1) running lots of a sizable quantity from one shipper; (2) buying from sections in which the cotton is known to be of good quality; (3) establishing a classing room with adequate equipment, including an array machine for checking staple and a polarizing microscope for testing maturity; and (4) running experiments on different kinds of cotton so that a satisfactory change can be made if the type in process becomes scarce or too high in price.

Mr. Williams referred several times in his address to articles on cotton classing which appeared in the October, 1934, and July, 1935 issues of TEXTILE WORLD.

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Cotton and Rayon Preparation

Problems discussed at Danville S.T.A. meeting

CARDING and spinning both cotton and staple rayon fiber were the chief topics considered at the spring meeting of the Northern North Carolina-Virginia Division of the Southern Textile Association held April 23 at Danville, Va. W. J. Jennings, of Minneola Mfg. Co., Gibsonville, N. C., chairman of the group, presided. L. V. Andrews, superintendent of Martinsville (Va.) Cotton Mills, led the carding session. W. A. Hunt, superintendent of Pickett Cotton Mills, High Point, N. C., was in charge of the spinning forum.

The first question brought up by Mr. Andrews was with reference to blending rayon staple fiber with natural fibers. In reply to this, J. L. Brannon, overseer carding and spinning, Durham (N. C.) Cotton Mfg. Co., gave a detailed report of his experience with staple fiber, which was in substance as follows: In making 100% rayon goods, it is not necessary to make extensive changes in settings on the old-style pickers. Since no cleaning is necessary the grid bar should be closed up and waste kept to a minimum. Mote knives beneath cards are unnecessary and may be removed. Screens are set as closely as possible. As little fiber is taken out in strips as the machine will take. Flats are set close. Doffer is operated at 400 r.p.m. and cylinder at 105 r.p.m. Referring to pickers again, from 1,000 to 1,200 r.p.m. seems to be a good speed as the rayon fibers are heavier than cotton and should be thrown evenly against the screen. Fans are operated at 1,150 r.p.m. Beater speed is about 600 r.p.m. Five strands of roving will completely eliminate split laps, and aging also helps. Tension and static electricity cause trouble in drawing. Sticker tape, such as used on slashers, will eliminate static if wrapped around the calendar roll. This increases the diameter of the roll by about 1/32 in., which can be offset by taking one tooth out of the tension gear. It is reasonable to assume that taking weight off the calender heads on the pickers would also help prevent split-laps, as rayon tends to pack tighter than cotton. For blending rayon and cotton in specific percentages, the simplest thing to do is make the rayon into all-rayon laps and add these to 100% cotton laps in the desired proportion. For example, one rayon lap and three cotton laps would result in 25% rayon yarn. For blending, the carding or Kirschner beater is run about 1,100 r.p.m. The blend can be made in the hopper back of the vertical opener as well as on the apron. E. M. Holt, manager, Erwin Cotton Mills, Cooleemee, N. C., asked if it is practical to blend rayon and cotton on the sliver lap machine. Mr. Brannon replied that it makes a very good blend and that any streaky appearance will disappear during the drawing.

With reference to running rayon mixtures on fly frames, B. W. Bingham, of Pickett Cotton Mills, reported that his weights are the same as for cotton. Changes "to keep the numbers" are made in drawing. Mr. Brannon added that a little glycerine in the humidity system, one quart to five gallons of water, will keep down static electricity and preserve an even moisture content in rayon.

S. T. Anderson of Marshall Field & Co., advocated a 55- to 60-grain sliver to make 1.5-hank roving on a long-draft frame, one process.

R. Carl Veach, of Marshall Field & Co., complained of the small gears on long-draft roving frames collecting dust and lint. Mr. Pegram reported twice as many ends down on long-draft as on conventional frames when spinning 30s yarn from 2.00 hank roving, single creel. But upon going to 1.45 hank roving with the same drawing sliver, he found long draft greatly improved his work.

Mr. Bingham, discussing calendar roll and coiler head trumpets, said that the size of the hole should depend on the kind of cotton, condensation of the fiber, etc. The bite should be as close to the calender roll as possible. It was agreed that the difference in hole size between the trumpets should be $\frac{1}{32}$ in.

Mr. Hunt runs the cork-covered front roll of his drawing from 175 to 313 r.p.m., with the doffer at 240 r.p.m. The roll is $1\frac{3}{8}$ in. Mr. Brannon added that high speeds for front rolls on drawing cause lap-ups, and that 200 r.p.m. is fast enough.

It was generally agreed that in changing to long-draft roving production should not be changed in the card room.

Without preliminaries, Mr. Hunt opened the spinning discussion by asking about oiling rolls and wickless saddles. Chairman Jennings uses heavy oil in a can with the spout cut off so that the oiler has to put his finger under the saddle. Mr. Andrews mentioned a commercial oil cup which automatically dispenses one drop of oil when needed.

Fuzziness on long-draft yarn can be helped, according to Mr. Brannon, by using a traveler heavy enough to prevent beating against the separator, and by sizing heavier. J. C. Pirkle, of Durham Cotton Mfg. Co., advocated the use of a little oil on the fibers and less punishment of the stock as it comes through the mill. The latter is accomplished by more attention to beaters, card clothing, and general condition of machinery. W. N. McCann, Pickett Cotton Mills, said that rabbit fur in the shuttle reduces fuzziness during weaving.

Consensus was that spinning tapes are better sewed together than fastened by other means. Several recommended cutting on the bias. J. L. Rhinehardt, of Pickett Cotton Mills, advocated a closely woven tape. R. J. Adkins, of Marshall Field & Co., pointed out that the strength of a tape is in the warp yarn, and consequently it is not important to have a great deal of filling. Mr. Veach said that he prefers a herring-bone weave to the usual light tape. No specific tests of longevity or power savings were offered.

Mr. Holt said that the best method of preventing shading in mocks is to creel all bobbins of the same shade in the same relative position to the trumpet in which it is going to run. He mentioned also a double trumpet which has been very successful. Mr. Pirkle recommended putting a wire separator in an old trumpet rather than using a double one as the wire does not hold the rovings so far apart. Mr. Brannon added that proper diameter of whorls on spindles helps.

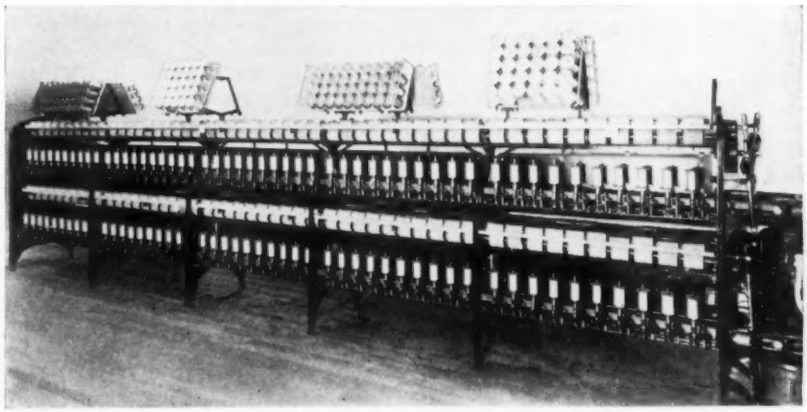
J. H. McDonald, of A. A. Shuford Mill Co., Hickory, N. C., was elected to the executive committee to succeed L. A. Elmore whose time had expired. Honor guests were E. M. Holt, president of the Southern Textile Association, and Culver Batson, who is a former president of the same group.

NEW MACHINERY AND PROCESSES

Silk and Rayon Twister

For use in production of all classes of silk and rayon yarns, and said to be especially favored for high-speed production of high-twist yarns, is a new twister recently introduced by Atwood Machine Co., Stonington, Conn. Included among the features of the machine are an inproved spindle-swing assembly, with the swing stand mounted directly on the pipe girts, thus eliminating spindle rails and permitting unlimited spacing flexibility. The new spindle swing has an exceptionally rigid two-point support, and the entire spindle assembly is notably stronger and simpler. The design is said to give perfect and permanent vertical alignment.

The new twister has an improved twist driving unit with a 5 to 1 reduction, is 100% ball bearing, and has a silent chain drive running to the take-up shaft. Another feature is the new, sliding motor drive, which is able to maintain uniform belt tension regardless of belt stretch or load changes. It is stated that an improved tension device assures exactly the right amount of belt tension against both motor pulley and spindles, resulting in uniform twist and maximum power and economy.



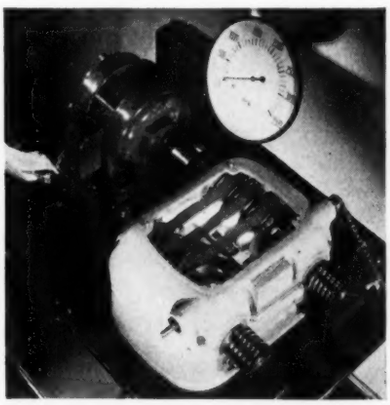
Silk and Rayon Twister (Atwood)

Vari-Pitch Speed Changer

A new speed-changing device utilizing the principle of the Vari-Pitch sheave has been developed by the Texrope Division of Allis-Chalmers Mfg. Co., Milwaukee, Wis. The device consists of a pair of shafts on which are mounted two deep-grooved Vari-Pitch sheaves adjusted through a worm and worm wheel operated either manually by means of a handwheel or electrically through a pilot fractional horsepower motor controlled through a forward and reverse pushbutton which can be located within easy reach of the machine operator.

It is stated the changer can be operated at high speeds, permitting the use of a direct-connected motor. Double shaft extensions permit the unit to be driven from either side or either end. Ball bearings of the cartridge type are used, allowing easier replacement of belts, and these bearings require attention only about as often as a ball-bearing motor.

Seven sizes of the speed changer are being placed on the market, covering a range of from 1 to 33 hp., with a speed range of 3.75 to 1, and running, approximately, between 300 and 3,600 r.p.m.



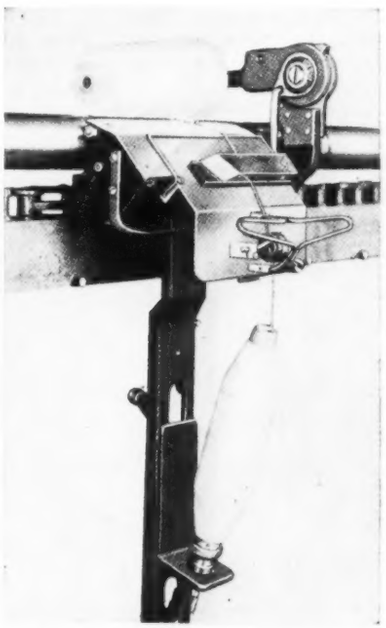
Vari-Pitch Speed Changer (Allis-Chalmers)

Winder Tension Device

To overcome difficulties in high-speed winding, due to variation in tension, Abbott Machine Co., Wilton, N. H., has developed a swinging disk tension, designed to give automatically controlled total tension, regardless of the variation of balloon tension of any particular yarn being wound. This tension is composed of two disks. The left-hand, or fixed, steel disk is backed by felt, covered in turn by another steel disk, and is supported from a bracket which permits the disk to be adjusted in and out to center it in the guide wire. There is a hole through the center of the disk which permits fly or dirt to work out, instead of accumulating in a pill or ring between the tension.

The right-hand, or swinging, disk is supported from a swinging arm which engages the center of the disk with a ball joint, allowing the right-hand disk to adjust itself to the left-hand disk and to the yarn passing through. This arm has a rear lever, behind the apron plate, on which various sizes of weights can be slid to and fro to obtain any desired pressure. The parts are light, and accommodate themselves readily to yarn at high winding speeds. During operation both disks revolve slowly. The entire construction of the tension is open, and, it is claimed, easy to adjust and clean. There are few places to collect lint, and no pegs or posts passing through the disk to wind up with rings and cause uneven tension and difficulty in cleaning.

The yarn passes into the disks and beyond the center, at which point



Winder Tension Device (Abbott)

the front edges of the disks close and the rear edges remain slightly open. This serves to prevent the thread from jumping out of the tension; it is not necessary to pass the thread at a sharp angle through the tension to keep the thread in place.

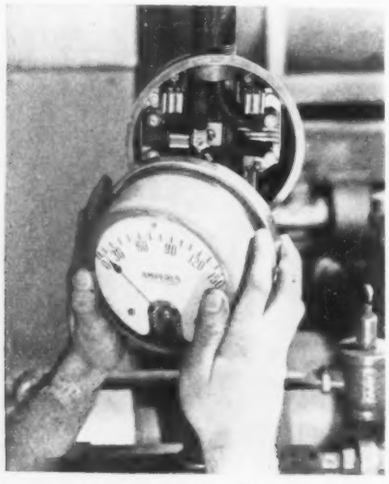
It is stated that, with this type of tension, the action of which is independent of the tension of the yarn due to balloon, increases of winding speeds to double or treble the former amount are possible; at the same time, good, firm packages, with even less breakage than what was common at former lower speeds, are produced.

Detachable Instruments

New low-cost, detachable instruments for general industrial use have been announced by Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. The sockets of these instruments can be cut into the conduit run feeding a motor, or several sockets can be grouped in standard metal boxes to constitute a panel assembly.

Sockets can be installed at low cost in all circuits feeding electrical loads in industrial plants and processes where it is helpful to know consumption and performance characteristics. Advantages of the plug-in instrument for industrial use are: socket provides its own switchboard, thereby eliminating panels, wiring, and mounting details; various instruments can be plugged into the same socket to obtain volts, amperes, watts, power factor, kilowatt-hours, etc.; sockets can be installed and sealed off to provide convenient outlets for future installation of instruments.

A detachable instrument consists of two main units, first, a socket or mounting device which is provided with electrical connection jaws, and, second, the instrument mechanism mounted on a plate having electrical connection blades on the back and inclosed in a waterproof housing of glass.



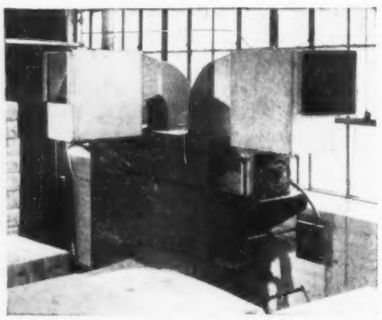
Detachable Ammeter (Westinghouse)

Among the various types of detachable instruments now available are included the following: a-c and d-c ammeters, voltmeters, and wattmeters; power-factor meters, frequency meters, and watt-hour-meters.

The socket is available with either two or three threaded outlets to receive $\frac{3}{4}$-in., 1-in., and $1\frac{1}{4}$-in. pipe conduit. Also, it is available with breakouts in the back for certain arrangements of wiring to and from the unit. Standard sockets are listed in a wide variety of styles to meet the requirements of almost any conceivable arrangement of wiring details.

Humidifying Equipment

Known as the "Humidity Box," what is said to be a simple, inexpensive, and practical means of humidifying textile mills and other industrial spaces, has been developed by Air Conditioning Supply Co., Cleveland, Ohio. Essentially a high-efficiency spray or fog chamber, provided with suitable water filter and nozzle, air filter-eliminator or baffle, and drain fitting, the unit is 16 in. wide, 25 in. long, and 25 in. high. It can be used in connection with blower type unit heaters (two Humidity Boxes are shown so attached in the accompanying illustration), propeller-fan-type unit heaters, or any warm air current, whether in free air or in a duct. The units require 30 lb. per sq.in. water pressure, 500 to 1,000 cu. ft. of air per min., and 3 to 4 gal. of water per hr.



Humidifiers (Air Conditioning Supply Co.)

Tacking-Machine Head

High-speed tacking is made possible by use of a new tacking-machine head introduced recently by Birch Bros., Inc., 32 Kent St., Somerville, Mass. The machine runs at a cloth speed of 25 yd. per min. and makes a stitch $\frac{3}{4}$ in. long. It is so designed that the head remains stationary, thus eliminating the vibration and wear which proved troublesome in the old type of tacking machine head.

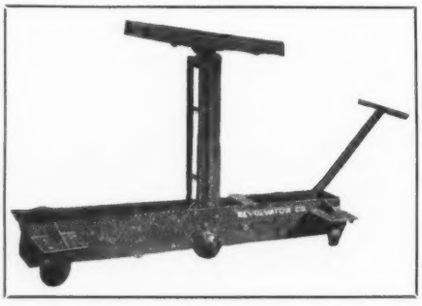
Tacking Machine Head (Birch Bros.)

In connection with this head, Birch Bros. have also developed a doubler, a table mounting for the head, and a folder, thus making a complete tacking machine range.

Hydraulic Beam Truck

For use in all mills which require transportation facilities for heavy warp beams, Revolvator Co., North Bergen, N. J., has recently placed on the market a new hydraulic beam truck. Among the features of the truck is a revolving cradle which facilitates placement of the warp beam in the loom. The lowered height of the truck is only $7\frac{1}{4}$ in., and it can be raised as high as 34 in. Cradle length is also adjustable, to accommodate different lengths of beam.

The chassis of the truck is arranged with four swivel casters, two at each end, and two fixed wheels at the center. Over-all length of the truck, not including the handle, is 5 ft., and its over-all width 17 in. The trucks have a capacity of 1,000 lb.

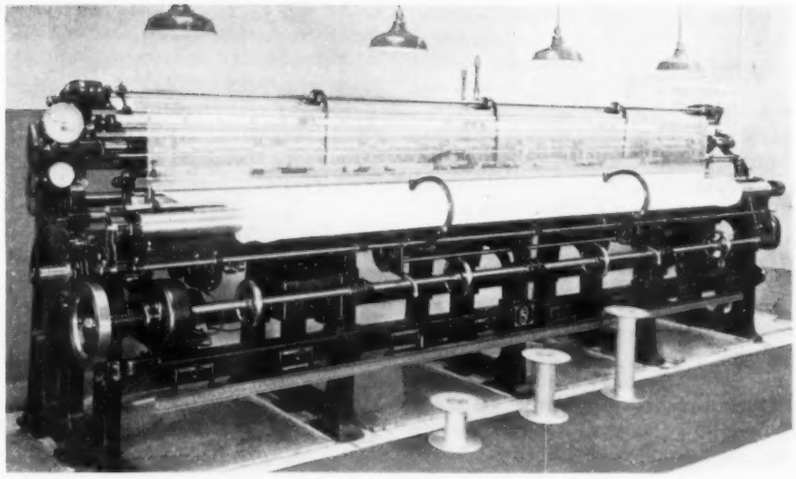


Hydraulic Beam Truck (Revolvator)

Tricot Machine

Greatly increased operating speeds and ability to use sectional warp beams are the outstanding features of the latest model Schneider & Reuthner tricot machine, introduced recently by Robert Reiner, Inc., Weehawken, N. J. The new machine has a normal operating speed of 360 to 400 r.p.m., and will run at speeds up to 450 r.p.m. and still maintain quality. It produces 9 to 10 lb. of single-bar fabric per hour from 100-denier rayon. Redesigning of the machine so that it will take sectional warp beams up to 14 in. in diameter has made possible the supplying of rayon on section beams by the rayon producer. This relieves the knitter of the necessity of carrying out any of the operations involved in warp preparation. A warp beam 12 in. long having a 9¾-in. flange holds between 18 and 20 lb. of yarn, delivering—for 28-gage cloth—over 300 ends between 2,800 and 3,000 yd. long. The 14-in. beam has a much greater capacity.

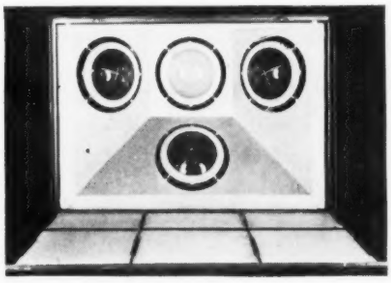
Other improvements include automatic let-off; take-up adjusted by a floating weight to insure uniform stitch; variable-speed drive; and composition presser bars which reduce friction on needle bars, thus reducing needle replacement. A very short needle is used to withstand the high operating speed of the machine.



Tricot Machine (Reiner)

Color Identification Box Lamp

Macbeth Daylighting Co., Inc., 227 West 17th St., New York, has announced its new color identification



Color Identification Box Lamp (Macbeth Daylighting)

lamp, type BKX83. The box lamp is 39½ in. wide x 57 in. long x 30 in. high. It contains three 1,000 watt Mazda bulbs and Corning Daylite filters, which are approved by the National Bureau of Standards and the American Society for Testing Materials as exactly reproducing true north-sky daylight. Also combined in the unit are the new Horizon-Sunlight, which magnifies color differences under ordinary artificial light; and a special diffusing frame, which has been attached so that the light will exactly reproduce natural daylight, not only in color, but in diffusion.

The daylight produced by this lamp is said to permit two men to match colors under an exact reproduction of overcast north-sky daylight of an intensity, 30 in. below the lamp, of 200 foot-candles. It is stated that when colors are checked under both the high intensity daylight and Horizon-Sunlight, the colors will match under any lighting condition; viz., north sky daylight, sunlight, or Mazda light.

Ultra-Violet Projector

Development of a low-cost projector which produces ultra-violet light for fluorescence examinations has recently been announced by Black-Ray Lighting Co., 10415 St. Clair Ave., Cleveland, Ohio. The equipment, which consists of a mercury quartz burner, transformer, black-quartz lens, and other accessories, operates on 110-volt a-c circuits. The device, which is known as the Black-Ray Quartz Arc, is said to produce the entire range of ultra-violet, including the extremely low ultra-violet, as well as the middle and near range.

Among the uses for the equipment in the textile industry, the following are cited: detects presence of mineral and fatty oils, waxes, albumins, etc., on textiles; detects mechanical damage in many cases, as well as damage by light, ironing, chemical treatment, oil and metal spots, mold, and mildew; detects impurities, mixed colors, chemicals in minute quantities, etc.; reveals inequalities in dyeings which are unseen in daylight, progress

Fig. 1.—Ultra-Violet Projector (Black-Ray)

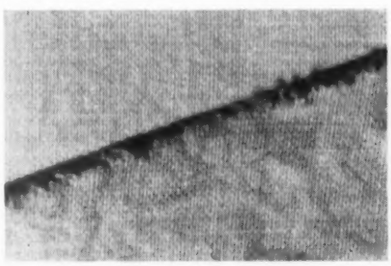


Fig. 2a

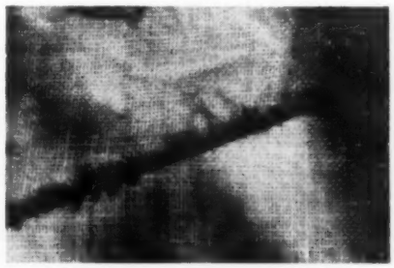


Fig. 2b

of "grasserie" disease in attacks upon silk worms, constituents of fiber mixtures, slight shade differences undetectable by other methods, extent to which fibers have taken up dyes; makes possible a rapid means of forecasting fading, effect of washing or light exposure on dyed textiles, rapid and accurate titration of colored solutions, and identification of products marked with either invisible or visible fluorescent inks.

Fig. 1 shows the projector. Fig. 2a shows two pieces of white cloth photographed by the light of a Mazda lamp; although one piece is clean and the other is dirty, no oil stains are visible to the eye. Fig. 2b shows same fabric photographed in light from Black-Ray Quartz-Arc, with oil stains fluorescing vividly.

Printing Ager

Features of a new all-steel ager, for screen and roller printing, developed by Tenny & Hoffman, Inc., Paterson, N. J., include ball bearings, guaranteed free rolls, large draw rolls which enable the machine to operate with a minimum of tension of cloth, motor drive with timing from 3 to 12 min., etc. The machine is manufactured in 12, 18, and 24-ft. lengths.

Photo-Electric Control

Photoswitch, Inc., Cambridge, Mass., has introduced a new photoelectric control for counting, motor control, signalling, inspection, and other industrial applications. The device is compact, simple, and rugged in construction, and both control and light source are furnished in approved weather-proof housings. Models are available which will operate efficiently with as much as 60 ft. between control and light source.

Photo-Electric Control (Photoswitch)

Among applications of specific interest to textile mills are actuation of thread-break stop motions, operation of feeler switches for tenter guides, etc. There are also numerous other applications, common to textile and other industrial plants.

Top-Roll Arbor

Durex, a material developed by General Motors research laboratories, is being used in the manufacture of a new top-roll arbor announced recently by Moraine Products Division, General Motors Corp., Dayton, Ohio. This top roll, which has a complete arbor made from Durex, can be inserted in the machine and run for from six to eight months without oiling, at which time it is usually necessary to clean the top of the frame. When this is done, the arbor can be removed and placed in a container of oil overnight, wiped, and replaced in the cycle of operation. This, of course, can go on indefinitely. The porous Durex arbor carries sufficient lubrication for long periods of time, supplying oil by capillary action to the bearing surfaces only as needed. This is said to assure adequate lubrication at all times, without overoiling. It is stated that this new-type arbor eliminates the possibility of oil dripping or smearing on yarn; considerably lessens the labor of lubrication, since this need only be done twice a year; and makes easier picking of lint and fuzz from top rolls and cap bars.

NEW DYES & CHEMICALS

Coning Oil

Laurel Soap Mfg. Co., Inc., Philadelphia, announces a new soluble rayon coning oil, called Laurel Ruxite RO. This product is described as a lubricator which prevents split filaments and breaks, gives greater pliability, emulsifies readily in water, washes out entirely in the scouring process, does not discolor on standing, and increases winding efficiency. The fabrics can be napped satisfactorily and various deniers can be blended to give variation in nap. Resistance to abrasion is reported to be very good.

Sulphamic Acid

Commercial production of sulphamic acid, a new inorganic acid having the form of a crystalline solid, was announced recently by E. I. du Pont de Nemours & Co., Wilmington, Del. This new acid is colorless, odorless, non-hygroscopic, and nonvolatile. When dissolved in water, it has the characteristics of a strong, highly-ionized acid, approaching hydrochloric and sulphuric acids.

Although identified about 60 years ago, sulphamic acid has never before been produced on a commercial scale because of lack of a practical process of manufacture. The new process, which was discovered independently at the same time in Germany and in the United States, is based on urea and fuming sulphuric acid. Although prepared from the organic compound urea, sulphamic acid itself is inorganic. In this respect, and because of much greater strength, it differs from such acids as lactic, acetic, formic, tartaric, and oxalic, to which group it is expected to be an important addition on the chemical market.

Because of unique physical and chemical properties, sulphamic acid and its derivatives are expected to be instrumental in improving processes and reducing costs in a number of industries. For example, one potential use of the acid, which is now being evaluated by the dye and pigment industries, is for removing excess nitrites following diazotization reactions.

Ammonium sulphamate, a derivative of sulphamic acid, is the fire retardant announced by the Du Pont Co. last year. Ammonium sulphamate is said to be unique among flameproofing salts because it does not cause stiffening nor otherwise adversely affect the handle and feel of fabrics, and because it shows no tendency to effloresce to the surface upon prolonged storage.

Other derivatives and reactions of sulphamic acid are believed to be of probable importance in the textile industry.

National Dyes

National Aniline & Chemical Co. announces the following new products: National Neutral Brown RD, an acid dye yielding a rich, coffee-colored shade of brown of excellent fastness to sea water and stoving, very good fastness to washing, acid, and alkaline perspiration; and good fastness to peroxide bleaching and carbonizing. National Solantine Grey BL, a direct dye yielding a somewhat bluer shade of gray than National Solantine Grey GL Conc.; it possesses excellent fastness to rubbing, alkali spotting and stoving, very good fastness to light and good fastness to washing, perspiration, sea water and organic acids; it is readily discharged. National Solantine Brown BRL, a fast-

to-light direct dye producing a somewhat more subdued shade than National Solantine Brown 4R.; it possesses excellent fastness to light, good fastness to perspiration, sea water, stoving, and rubbing. National Alizarine Sapphire 2GL, an acid dye yielding pure blue shades possessing excellent fastness to light, carbonizing, stoving, alkali spotting, and rubbing.

General Dyes

General Dyestuff Corp. announces the following new products: Rapidogen Golden Yellow IFG, the first golden-yellow Rapidogen dye; it yields printing pastes of very good stability; on cotton and rayon fabrics full, bright golden yellow prints are obtained, which in full shades possess excellent fastness to light and very good fastness to washing and chlorine. Supra Light Yellow GGL, an acid dye yielding pure, rather greenish yellow shades of very high fastness to light; it is of particular interest for direct prints, as well as colored discharges on wool and silk fabrics.

NEW PUBLICATIONS

FASHION IS SPINACH; by Elizabeth Hawes; Random House, 20 E. 57th St., New York; $2.75.

The best thing which has come from a couturiere in many years is this delightful little number by America's ace designer. She lifts the lid off the second largest American industry and exposes it as a combination three-ring circus, acme of ballyhoo and blatant form of racketeering. She shows us the difference in style, a lasting gift of the gods, and fashion, a "deformed thief." She shows us "Paris Originals" for their actual worth. She shows up all women as fools if they follow the pattern and allow salespersons to substitute fashion for style by high pressure methods. But, Miss Hawes does more than that. She, pioneering in American designing, points the way to the future of American style-beautiful fabrics designed and manufactured here; beautiful clothes designed and made from beautiful American-made fabrics wholly independent of mass production methods.

For this reason textile executives should read this book. Afterwards they will doubtless feel called upon to dedicate some portion of their plants to ART. Why should America's designers have to seek imported fabrics? Making little enough profit on present methods manufacturers may find satisfaction in creating beauty in American textiles from which Miss Hawes will create lovely clothes, for it is assumed her clientele will grow in direct ratio to the sale of her book.

SYMPOSIUM ON WEAR OF METALS; American Society for Testing Materials, 260 South Broad Street, Philadelphia. $1.25.

The section of this book of chief interest to textile men is one on "Wear of Metals in the Textile Industry," by Albert Palmer, of Crompton & Knowles Loom Works, in which are given examples of recent improvement in textile machinery with a view toward reducing wear to a minimum.

SUCCESSFUL FASHION SHOWS; by Nancy H. Bowman; edited with foreword, by Norris A. Brisco and John W. Wingate; Journal of Retailing, New York University School of Retailing, New York; $1.50.

The increasing importance of the fashion show in textile merchandising lends interest to this practical book on the subject. The book comprises material assembled by Miss Bowman as a seminar study while attending the School of Retailing. Miss Bowman, now feature publicity and fashion show director of Abraham & Straus, Inc., Brooklyn, N. Y., presents vital information on all aspects of planning and executing a successful fashion show.

DAMAGED COTTON; by John A. McKee, Graham Printing Co., Ltd., New Orleans, La.

In a technical study of the physical problems related to the handling of damaged cotton, the author explains the susceptibility of cotton to damage, various types and causes of damage, methods of preventing damage, ways to retard or check deterioration of cotton fibers, selling of damaged cotton, and the difficulties of salvage. The book was written, primarily, for underwriters and cargo surveyors, but should be of interest to anyone engaged in manufacturing, transporting, storing, or distributing of cotton.

MAKING HISTORY IN HOSIERY; by Lawrence Rogin; Educational Department, American Federation of Hosiery Workers, Philadelphia; 10¢.

Hosiery manufacturers and distributors will find much of interest in this 31-page history of the American Federation of Hosiery Workers. The upward trend of hosiery wages, from $16 for a 60-hour week at the turn of the century, is dramatically told, and the union's point of view of its growth is clearly and concisely presented.

CASTE AND CLASS IN A SOUTHERN TOWN; by John Dollard, Ph. D.; Yale University Press, New Haven, Conn.; price, $3.50.

Another one of the social studies on white and black, Professor Dollard's is different in that it is better than the average. His studies are based on a stay in the region under investigation which was long enough to give him proper perspective. His analysis of the problems in a southern town is good, and he presents the economic, social and physical sides of the ever-present racial problem in the South through observations made by both personal contact and exhaustive, neutral case-work.

Although he offers no concrete solution to the problems he found existing in this typical Deep-South community, he at least gets to first base by bringing them to light in as unbiased a manner as is possible, and it may be that this is the elementary text book long needed in a southerner's education on this most vital and long neglected subject, for there are and will continue to be definite caste problems and class problems in every southern plantation-quarters, village, town, and county. However, the book will probably be ill-received in the Deep South for it is too true in too many respects.

With the swing of textile plants toward the Deep South it behooves textile executives to read this book and learn through it some of the labor problems which are to be faced with the trend of industrial migration. Such migration, too, may serve as a solution to the pressing economic problems as are found in a southern town; it will at least give the lower caste element a diversification in work opportunity.

TESTED SENTENCES THAT SELL; By Elmer Wheeler; Prentice-Hall, Inc., New York; $3.75.

This book by the president of the Tested Selling Institute, probes into the dynamics of suggestive selling as practiced by the written word. It analyzes the effectiveness of famous commercial slogans and then offers formulas for the developing of successful advertising copy. With the increasing trend of certain textile divisions to advertise direct to the consumer, this volume should have interest and value for advertising executives of such companies.

NEWS OF SUPPLIERS

Calco Chemical Co., Inc., Bound Brook, N. J., has announced that on March 31, 1938, the American Cyanamid Co. acquired the assets of Amalgamated Dyestuff & Chemical Works, Inc., Newark, N. J., manufacturers of aniline colors and coal-tar products, and that the plant formerly operated by Amalgamated Dyestuff has been turned over by American Cyanamid to Calco to be operated as one of its manufacturing divisions. Calco is a wholly owned subsidiary of American Cyanamid Co. At the same time when the assets of Amalgamated Dyestuff were acquired, American Cyanamid also acquired the assets and business of John Campbell & Co., New York. whose business in the sale of dyestuffs and related products will hereafter be continued at the same location by a newly formed company under the name of "John Campbell & Company, Inc."

Henry Anner, of Greenville, S. C., has been appointed southern representative of Thomas & Skinner Steel Products Co., of Indianapolis, Ind.

Carter Traveler Co., Gastonia, N. C., has appointed L. L. Hurley, formerly superintendent of Marshall (N. C.) Mill & Power Co., and J. L. Gray, president of Gray Specialty Yarn Co., Gastonia, N. C., to be Carter's North Carolina representative and technical advisor, respectively.

Karl Lieberknecht, Reading, Pa., announces that all "Kalio" full-fashioned hosiery machines made in America will be equipped with Royersford products, including the new Royersford specialty finished needles.

Republic Steel Corp., Cleveland, has appointed the following new jobbers for its tubular products: American Wholesale Hardware Co., Long Beach, Calif.; Anderson Supply Co., Norwich, Conn.; Valley Supply Co., Springfield, Mass.

Proctor & Gamble, Cincinnati, Ohio, has elected Clarence J. Huff vice-president in charge of sales. He was for many years general sales manager, in which office he is succeeded by Thomas J. Wood, previously manager of the western sales division.

American Standards Association, New York, is undertaking a plan to set up standard practices for testing laboratories and other public endorsement agencies. The move is backed by ten interested groups of national scope.

American Cyanamid & Chemical Corp., has appointed Hugh Puckett

Hugh Puckett, southern sales manager of American Cyanamid & Chemical Corp.

as southern sales manager of the company with headquarters at the Charlotte office. Mr. Puckett came to American Cyanamid & Chemical Corp., a year ago when that company acquired the business of Chas. H. Stone, Inc. Prior to his association with Stone, Mr. Puckett had been in the service of National Aniline & Chemical Co. and the General Dyestuff Corp.

Scott & Williams, Laconia, N. H., held its annual spring meeting and sales conference at The Tavern, Laconia, last month, with Walter L. Toy, president, in charge. In addition to Mr. Toy those attending included vice-president, Page; treasurer, Harry J. Kelley; Harry Shepard, of the New York office; F. H. Hallenbeck, of High Point, N. C.; and Beale Faucette and S. H. McInnes, of the New York sales force.

Roxalin Flexible Lacquer Co., Elizabeth, N. J., has added to its technical staff J. R. Siegers who for sixteen years was connected with the Lyons Piece Dye Works in charge of novelty finishes under Dr. Ernest Cadgene, and who was for several years with the Hamilton Print Works, Clifton, N. J.

Victor A. Hanson, vice-president and chief engineer of the Power Transmission Council, has been transferred from Boston, Mass., to Detroit, Mich., where he will conduct a general study of power transmission problems in the automotive industry.

Norma-Hoffmann Bearings Corp. Stamford, Conn., has appointed D. E. Batesole, formerly assistant chief engineer, as chief engineer succeeding the late Geo. R. Bott. T. E. Rounds of the engineering department has been made assistant chief engineer.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has appointed William Arthur as its Philadelphia district manager to succeed the late J. E. Wray.

Gummed Industries Association, New York, R. A. Fife, managing director, has established an independent Certified Products Bureau designed to insure maintenance of quality standards and to combat sub-standard sealing tape products under misleading quality endorsements. Services of the Bureau will be available to all subscribers. It will offer the use of a new copyrighted label which is to be a hall-mark of quality.

American Dyewood Co. has removed its New York office to 22 East 40th St.

B. F. Goodrich Co., Akron, Ohio, has appointed J. L. Hart to sell Koroseal materials to the textile industry in North and South Carolina. He will maintain headquarters at 618 South Main St., Greenville, S. C.

Commercial Solvents Corp., has transferred its sales headquarters and warehouse stocks from Atlanta to Charlotte, N. C. H. S. Ricker is branch manager.

Kenneth W. Glace is now associated with the **Specialty Products Co. Inc.,** Jersey City, N. J., as representative in the southern territory. Mr. Glace was formerly of R. K. Laros & Co.

Newly enlarged plant of S. Blickman, Inc., Weehawken, N. J., maker of stainless steel equipment for the textile industry.

Diamond Alkali Co., Pittsburgh, Pa., has opened an office in Philadelphia in charge of C. F. Wolters, Jr., located at 12 South 12th St.

Monsanto Chemical Co., St. Louis, Mo., recently prepared and issued a special edition of its annual report for its employees. It is interesting evidence of well planned industrial relations and demand for copies from many sources is reported.

John G. Webb has become southern representative for Atwood, Crawford & Co., of Pawtucket, R. I., manufacturers of Adjusto-O-Matic Swifts and other textile mill equipment and supplies. It is understood Mr. Webb will make his headquarters in Hillsboro, N. C.

Sheffler-Gross Co., Drexel Bldg., Philadelphia, agent for heating equipment, has been appointed representative for Eastern Pennsylvania by the American District Steam Co., North Tonawanda, N. Y., manufacturers of Adsco expansion joints, tile conduit, meters, water heaters, etc.

Jasper-Groz Needle Co., has removed its office and stock room to 289 Morris Ave., Elizabeth, N. J.

Reliance Electric & Engineering Co., Cleveland, has added to its sales organization Rutherford Harris, New York, Geo. E. Bevis, Syracuse, and C. R. Newpher, Cleveland. The Boston office of the company has been moved to 176 Federal Street.

Cochrane Corp., Philadelphia, Pa., has appointed C. J. Gaskell Co., Memphis, Tenn., as district representative for all of its products in Arkansas, western Tennessee and northern Mississippi.

Lincoln Electric Co., manufacturers of arc welding equipment, Cleveland, Ohio, announces establishment of a manufacturing subsidiary to be called Lincoln Electric Co. (Australia) Pty., Ltd., at Sydney, Australia. A suitable factory has already been purchased and arc welding equipment manufacturing operations will begin in a year's time. J. F. Lincoln, president of the company has been in Australia in connection with this enterprise and is returning this month. He expresses great faith in Australia's industrial future.

Morse Chain Co., Detroit, Mich., has appointed Harold J. Skidmore, formerly assistant superintendent, to be factory manager and superintendent, succeeding C. B. Mitchell, resigned. L. D. Worden has been added as assistant sales manager, in charge of industrial products manufactured in the Detroit plant.

United States Testing Co., Hoboken, N. J., reports that its total for 1937 of 154,389 tests, shows an increase of 11,761 tests over 1936. Most of this increase has been in consumer serviceability tests. Test figures for January, February and March, 1938, exceed corresponding periods in 1937 by a high percentage.

J. F. Lincoln, president, Lincoln Electric Co., Cleveland, Ohio, caught feeding kangaroos in Australia where the company has established a subsidiary to manufacture arc welding equipment and where, Mr. Lincoln believes, there is a great industrial future.

Automatic Machinery Mfg. Corp., Bridgeport, Conn., has succeeded to the business of the Automatic Machine Co. following 77B reorganization. George L. Sexton, former president, will remain as president and general manager.

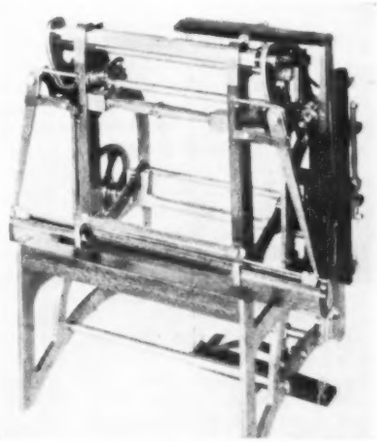
Carnegie-Illinois Steel Corp., Pittsburgh, Pa., announces that C. R. Moffatt, formerly its advertising manager, is now director of advertising of the United States Steel Corporation of Delaware, and that he has been succeeded by G. R. Schreiner.

Hubinger Co., Keokuk, Iowa, starch manufacturer, has appointed A. G. ("Al") Smith to its textile division. He will make frequent trips through the southern territory which he has served in previous years as starch salesman. Chester M. Goodyear is southeast sales representative of Hubinger with headquarters at Atlanta.

Armstrong Cork Products Co., Lancaster, Pa., has consolidated its Textile and Shoe Products Divisions, the united division to be headed by W. B. Tucker, for six years in charge of the Textile Division, as general manager. He will be assisted by T. L. Hill as manager of the Textile Department. Mr. Hill has been manager of the Greenville, S. C., office of the Textile Division for the last six years and will be succeeded in Greenville by J. V. Ashley, senior salesman of that office. D. N. Herr, formerly of the Lancaster office, has been assigned to Greenville as a salesman in the Textile Department.

Fairbanks, Morse & Co., Chicago, on April 1 distributed bonus checks totalling $106,114.54 to 4,472 employees in conformity with a profit sharing program announced by company executives last year.

Westinghouse Electric & Mfg. Co., reports that, although bookings during the first quarter of 1938 were 49% less than during similar period of 1937, March business showed an increase of nearly $4,000,000 over February. Appointment of Harry F. Boe as manager of the Service Department of Westinghouse is announced by President George H. Bucher. He succeeds W. K. Dunlap, assistant to vice-president, formerly in charge of the department, who retires.



Crompton & Knowles Loom Works, Worcester, Mass., has recently issued a booklet, "100 Years of Patents," in commemoration of the 100th anniversary of the patenting of the Crompton loom. Original model of fancy loom invented by William Crompton in 1837 is shown in illustration above. Included in the booklet are an historical sketch of William Crompton, written by his grandson, George Crompton; and a discussion of the more noteworthy patents issued during the last century to Crompton & Knowles Loom Works and its predecessors, written by Walter K. Wakefield, C & K Patent Dept. Today every power loom in the world (excepting cam looms and jacquard looms) employs some adaptation of William Crompton's invention covering the use of a pattern chain for governing the movement of the harnesses; however, when Crompton first attempted to introduce his looms in New England, the cotton manufacturers were not interested in his invention and it was first applied commercially in this country in weaving of woolen fabrics.

THE PERSONAL PAGE

Arthur B. Chapin has been elected president of the Farr Alpaca Co., Holyoke, Mass., succeeding the late Frank H. Metcalf, who served as chief executive from 1924 until his death earlier this year. Mr. Chapin has been a director of the company since 1924. **Donald Green,** treasurer, was elected to the directorate to fill a vacancy caused by the passing of Mr. Metcalf.

T. B. Puckett has been elected president of Conestee (S. C.) Mill. He succeeds the late T. I. Charles. **Mrs. Lois P. Charles** is vice-president and treasurer; **J. C. Squires** secretary and assistant treasurer.

John H. Mueller was elected president and treasurer of Eagle Rock Hosiery Mills, Singac, N. J., at the company's annual meeting on April 21. **Adele Mueller** was elected vice-president and secretary, and **William H. Stephany** was elected assistant secretary.

Major E. C. Gwaltney, in charge of research for Bibb Mfg. Co., Macon, Ga., has in addition been appointed consulting engineer with Saco-Lowell Shops, Biddeford, Me.

T. G. Gray is the new superintendent of the Gossett Mills at Williamston, S. C. He was formerly associated with the Chadwick-Hoskins group of mills in Charlotte, N. C.

L. H. Ferguson, formerly with Ware Shoals (S. C.) Mfg. Co., has been made night superintendent of printing at Rock Hill (S. C.) Printing & Finishing Co.

James F. McGimsey, was elected president, **J. H. Gaston,** vice-president and **C. H. Ross,** secretary-treasurer of Ross Fabrics, Inc., recently chartered to manufacture tapestry and upholstery materials at Morganton, N. C., at the first meeting of the board of directors in early April.

Frank J. Knoll, of Lehman Bros., who is now vice-president, has been nominated for president of the New York Cotton Exchange. **Robert J. Murray,** of Weil Bros., has been nominated for vice-president, to succeed Mr. Knoll. **Clayton B. Jones** has been renominated for treasurer. Election will be held June 6.

E. P. Watson, aged 76, one of the oldest active executives in the Canadian textile industry, retired on April 1 as manager of the Watson Co., a subsidiary of Penman's Ltd. For 59 years, Mr. Watson has been actively engaged in the knitting industry. In 1893 he established the Watson Co. and has been its manager ever since.

Robert R. West, president of Riverside & Dan River Cotton Mills, elected second vice-president of American Cotton Manufacturers Association at recent convention at Augusta. (See pages 46 and 47). This selection puts Mr. West in line for the presidency in 1940.

Daniel E. Weedon has resigned as a vice-president and sales manager in charge of the New York office of the Sayles Finishing Plant, Inc., Saylesville, R. I.

I. D. Bachmann, assistant vice-president of Bachmann, Emmerich Factors Corp., New York, associated with the business since its inception in 1898, has resigned.

George F. Gaede, sales manager of Richmond (Va.) Piece Dye Works, has been made vice-president of that company. He will continue to make his headquarters in New York.

F. W. Tipper and **Howard Smith** have formed partnership to operate as wool goods selling agents in New York. Both have been active in the field for many years. Mr. Smith was lately of Tracy & Smith which firm is being dissolved. Jamestown Worsted Mills, for which they were selling agents is to sell its product direct.

W. J. Erwin, executive vice-president of Republic Cotton Mills, Great Falls, S. C., was recently elected a director of the Chester (S. C.) Chamber of Commerce.

Scott Russell, member of the law firm of Jones, Russell & Sparks, general counsel of Bibb Mfg. Co., Macon, Ga., was elected executive vice-president and a director of the company at the recent regular quarterly meeting of the board.

Hearne J. Swink, Salisbury, N. C., was made a vice-president, and **Frederic A. Williams,** New York, was elected a director to succeed C. E. Stevenson, deceased, at the annual meeting of Cannon Mills Co., held at Kannapolis April 12. The following officers were re-elected: president, **C. A. Cannon;** vice-presidents, **A. L. Brown,** Kannapolis; **J. J. Barnhardt,** Concord; **A. R. Howard,** Concord; **A. W. Fisher,** Kannapolis; **W. J. Swink,** China Grove; **Frederic A. Williams,** New York; secretary and vice-president, **Hearne J. Swink,** Salisbury; treasurer, **E. Sauvain,** Concord; assistant treasurer, **George A. Batte, Jr.,** Concord; and assistant secretary, **J. J. Boyle,** Concord.

John A. Law, president of Saxon Cotton Mills, Spartanburg, S. C., has been nominated by the United States Chamber of Commerce for re-election as a member of the board of directors of that organization.

Joseph B. Hughes, of Lancaster, S. C., a graduate of the Textile School at N. C. State College, has gone to Lima, Peru, where he is in the employ of a textile organization under a five-year contract.

Hugh M. Comer, vice-president and manager of Avondale Mills, Sylacauga, Ala., was speaker at the meeting of Southeastern Section of the American Association of Textile Chemists & Colorists, at Hotel Dempsey, Macon, Ga., on April 23. His subject was "The Importance of a Good Finish From the Mill Executive's and Customer's Point of View."

Allen H. Sims, cashier of the Citizens National Bank, Gastonia, N. C., has been elected vice-president of the Gastonia Full-Fashioned Hosiery Mill, Inc.

Harry Vanderbree is now general manager of the Massena (N. Y.) Silk Co.

T. M. Forbes, secretary of the Cotton Manufacturers' Association of Georgia, was the guest of Governor E. D. Rivers on a good-will trip to Cuba.

William W. Sharpe, Jr., has been named manager of the new Silver City (N. C.) Hosiery Mill, which will be operated by the Mock-Judson-Voehringer Co., of Greensboro.

George W. Graff, a department head at Wayne Knitting Mills, Fort Wayne, Ind., for five years before he left that city in 1936, has acquired full control of the Ambler Hosiery Co., Ambler, Pa.

George H. Johnson has been elected general manager of American Institute of Laundering, Juliet, Ill., succeeding **Lloyd Peck.**

James M. Donnelly, assistant superintendent of the Thompsonville (Conn.) plant of the Bigelow-Sanford Carpet Co., has been transferred to the Amsterdam, N. Y., plant, as superintendent.

Constant Scholer has resigned as head of the technical department of National Silk Spinning Co., New Bedford, Mass.

C. W. Geier, formerly superintendent of the Hazleton, Pa., plant of the Duplan Silk Corp., has become superintendent of Pinehurst Silk Mill, Hemp, N. C., succeeding **W. R. Rosendale.**

TEXTILE CALENDAR

- *U. S. Institute for Textile Research, annual meeting, Hotel Pennsylvania, New York, May 24, 1938.*
- *S. C. Slashing and Weaving Division, S.T.A., Spartanburg, S. C., May 14, 1938.*
- *Southern Textile Association, annual meeting, Blowing Rock, N. C., June 17 and 18, 1938.*
- *American Society for Testing Materials, annual meeting, Chalfonte-Haddon Hall, Atlantic City, N. J., June 27 to July 1, 1938.*
- *National Exposition of Power and Mechanical Engineering, thirteenth show, Grand Central Palace, New York, Dec. 5 to 10, 1938.*

Kenneth L. Rice, superintendent of Fall River (Mass.) Bleachery for last nine years, has resigned to become superintendent of the finishing plant of United Merchants & Mfrs. Corp. at Buenos Aires, Argentina.

O. V. Russell, for several years in charge of the New York office of Polly Prentiss, Inc., has resigned to head the sales oranization of the Master Tuft Corp. and M. W. Cannon & Co., both of Chattanooga, Tenn. They produce candlewick, chenille and punchwork bedspreads.

Ed Mullis, formerly of Gadsden, Ala., has become overseer of spinning at the Adrian and Madora Mills, Mount Holly, N. C.

E. H. Carnal has been appointed Philadelphia salesagent for Riverside Worsted Co., Woonsocket, R. I.

Frank D. Cheney in charge of sales for Cheney Bros., New York, has been placed in charge of a research department for development of new products and maintenance of quality. He is succeeded by **Franklyn D. Griffin.**

Joseph Levy has joined **Waldo Grose** in the management of designing and merchandising women's wear fabrics for Botany Worsted Mills, New York. Mr. Levy was formerly with the Walther Mfg. Co. as salesmanager and stylist.

G. Fred Gurnham, for more than 30 years traffic manager of Ludlow (Mass.) Mfg. & Sales Corp., has retired, as has also **Fred Cummings,** for more than 25 years employment and service manager.

Foy De La Mater, formerly safety manager, has been made head of the new personnel department at the Amsterdam, N. Y. branch of Bigelow-Sanford Carpet Co.

Andrew Cavanaugh, superintendent of the four Adams, Mass., mills of the Berkshire Fine Spinning Associates has been transferred to the Providence, R. I., mills of the firm.

Albert Cornhall, for the last 15 years with William L. Barrell Co., New York, has joined Crompton - Richmond Co., to organize and direct its new division, Richmond Textiles, which will create and present materials for sports garments.

Harry Turkenich, recently sales agent in New York for the Hughes Woolen Mills, is now associated with D. H. Grant & Co. where he will control the product of Caryville Woolen Mills.

Henry G. F. Lauten, Prince Lauten Corp., New York, veteran converter who spoke at silver anniversary dinner of Textile Fabrics Association April 25. *(See page 55.)*

Edgar Holmes, Wilton, N. H., former superintendent at the Hillsborough Mills, has been appointed wool appraiser for the Federal AAA, and expects to be located in Texas.

E. S. Armstrong, who has been cost accountant of the Fort Mill, S. C., plants of the Springs Cotton Mills, has been transferred to the mills of the same company at Chester, S. C., in a similar capacity. **Sam Faile,** formerly of Lancaster, S. C., has succeeded Mr. Armstrong at Fort Mill.

Ralph Davis, of LaGrange, Ga., is now overseer of weaving at Alabama Mills, Inc., Jasper, Ala.

B. E. Smith, Clemson Textile School graduate, is now second hand in spinning at Easley Cotton Mills No. 2, Liberty, S. C.

R. S. Mitchum, of Evansville, Ind., has accepted a position with Texas Textile Mills, Inc., McKinney, Tex.

Sidney Siegel has become associated with the cotton yarn department of Iselin-Jefferson Co., New York.

Julius E. Nordby has been appointed director of the Western Regional Sheep Breeding Laboratory, Dubois, Idaho, and activity of the Bureau of Animal Husbandry, U. S. Dept. of Agriculture.

Ray M Wolfe has joined Churchill Weavers, Berea, Ky., where he will merchandise fabrics for the neckwear trade.

Arthur B. Cooke has resigned his connection with Celanese Corp. of America, New York, to join Callaway Mills to handle their spun rayon fabrics.

Arnold Elias has been appointed sales manager of the

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We check credits, assume credit losses, and advance in cash, the net value of shipments as made.

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For All Textile Purposes

Manufactured by
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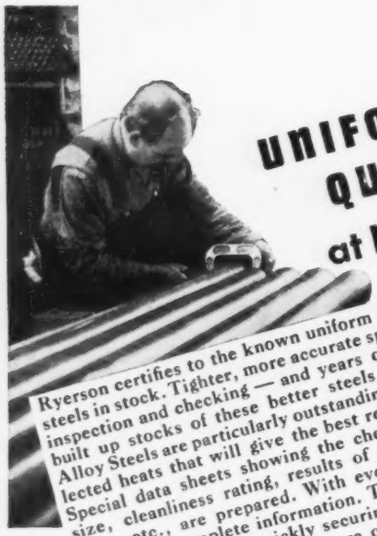

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FOR ALL TEXTILE MARKING PURPOSES

THE FINEST CRAYON FOR MARKING ALL KINDS OF TEXTILES

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CLAYTON, NEW JERSEY

Also **INVERSAND** Zeolite Softeners, Chemical Feeders, De-Oiling Filters and **BASEX** and **HI-BASEX** Greensand Zeolites

Laurence N. Hale recently made production manager of the Manufacturing Division, Marshall Field & Co., Spray, N. C.

wool goods section of the dress fabrics group of Marshall Field & Co., Manufacturing Division, New York. **Jules Wareck** will be in charge of the silk and rayon finished goods section and **Jim Herdic** continues as sales manager of silk and rayon greige goods.

Harry E. New, who has been associated with the textile division of Clemson (S. C.) College since his graduation in 1935, has resigned to become associated with the Associated Factory Mutual Fire Insurance Co., and is now located in Boston, Mass.

Edwin Camp has become assistant overseer of weaving and twisting, Unity Cotton Mills, LaGrange, Ga.

Clyde Jackson has resigned as overseer of carding at the Gayle unit of the Springs Cotton Mills, Chester, S. C., to become assistant overseer of carding at the Inman (S. C.) Mills.

L. C. Hamrick, head of the weaving department of the Buffalo plant of the Union-Buffalo Mills, Union, S. C., has been transferred to the same post at the Union plant of the company to fill the vacancy incurred following the death of Fred Sanders.

Charles W. Figgins, former plant engineer of the National Silk Spinning Co., New Bedford, Mass., has joined the Edwards Mfg. Co., Augusta, Me., in a similar capacity.

Dewey Snyder has resigned his position with the Drayton Mills at Spartanburg, S. C., and has become overseer of weaving at the Victor plant of the Victor-Monaghan Co., Greer, S. C.

C. D. Bowers has become overseer of weaving at the Watts Mills, Laurens, S. C.

Russell H. Armitage, of New Bedford, Mass., a graduate of the New Bedford Textile School, class of 1937, has obtained a position with the United States Testing Co., Hoboken, N. J., being employed in the physical-testing department.

J. Manning Bolt is now superintendent of Calhoun Mills, Calhoun Falls, S. C. He was previously superintendent of Gossett Mills, Williamston, S. C. T. G. Gray, of Chadwick-Hoskins Co., Charlotte, N. C., has succeeded Mr. Bolt with Gossett.

Jas. L. Beard has resigned as superintendent of weaving, slashing, warping, etc., at Riverside Division of Riverside & Dan River Cotton Mills, Danville, Va. He will enjoy a vacation for a time at Newton, N. C.

Irving Holman has resigned a sales manager of dress fabrics at Susquehanna Silk Mills, New York, to head his own converting firm at 1412 Broadway under the name Holman Fabrics, Inc.

Harry C. Aberle, Jr., son of the president of H. C. Aberle Co., Philadelphia, has resigned his connection with that firm.

F. R. Love has been transferred from the plant of North American Rayon Corp., Elizabethton, Tenn., to the Southern district sales office of the company at Greensboro, N. C.

Joe Lyons, assistant superintendent of Orr Cotton Mills, Anderson, S. C., was elected chairman of the South Carolina Carders and Spinners Division of S. T. A. at the Greenville meeting, April 30. He succeeds **Joe Cobb** of Easley.

John I. Smith is the new general manager of the Renfrew Bleachery of the Brandon Corp., Travellers' Rest, S. C. He succeeds C. T. Tourtellot.

Dennison Walker observed his 94th birthday April 24 at his home in Ware, Mass. He retired as a woolen manufacturer several years ago and has lived on his farm since. He operated the Walker Woolens Mills, at Ware, and later owned mills at other points in New England.

David Crowell, recently assistant superintendent of Cannon Mills, Concord, N. C., has become superintendent of the Courtney Mfg. Co., Seneca, S. C., one of the Cannon mill interests.

J. C. Rahn, vice-president and superintendent, Harbor Knitting Mills, East Boston, Mass., has sold his interest and resigned.

Gustave P. Victorson, who recently operated the Philadel-

phia Hosiery Mills has joined Benal Hosiery Co., New York, in charge of full-fashioned hosiery department.

John W. Triggs has resigned as overseer of weaving at the Gayle plant of Springs Cotton Mills, Chester, S. C.

J. B. Crowder is the new overseer of carding at the Unity Cotton Mills, LaGrange, Ga.

Obituary

A. Foster McKissick, aged 68, vice-president of Alice Mfg. Co. and Ariel Mills, Easley, S. C., died at his home in Greenville last month. For more than a third of a century he was prominent in cotton

A. Foster McKissick (from an old photograph)

manufacturing circles in South Carolina, having served from 1901 to 1918 as president of Grendel Mills and Ninety-Six Cotton Mills, near Greenwood. Prior to that he was associated with Pelzer Mfg. Co., following a short career on the faculty of Alabama Polytechnic Institute, Auburn, Ala. He graduated from the University of South Carolina in 1889 and received a master's degree in mechanical engineering in 1895 from Cornell University. Business interests aside from textiles included directorships in several railroads. At one time he served as member of the State House of Representatives from Greenville County. Mr. McKissick was a son-in-law of Captain Ellison A. Smyth, 90-year old manufacturer, and was a brother of J. Rion McKissick, president of the University of South Carolina. A son, E. A. McKissick, is head of the mills at Easley.

Thomas F. Jeffress, aged 78, president of King Cotton Mills, Burlington, N. C., died April 19, at Richmond, Va.

Franklin Cockshutt, aged 80, president of Slingsby Mfg. Co., Bradford, Ont., and identified with it since 1893, died recently at his home in that city.

Charles P. Clarke, aged 77, founder and president of the Fort Schuyler (N. Y.) Knitting Co., died at his home in Utica, N. Y., on April 12.

Mrs. J. W. Cannon, Sr., widow of the founder of Cannon Mills, died May 4 at her home in Concord, N. C., after a lingering illness at the age of 80. She was the mother of Chas. A. Cannon, president of Cannon Mills. She was noted in North Carolina for her philanthropy, having given land and support to the new Cabarrus County Hospital, having aided the Jackson Training School and other institutions and performed benefactions for thousands of employees of the Cannon organization.

Lawrence Marx, aged 51, president of Cohn-Hall-Marx Co., New York, and vice-president of United Merchants & Manufacturers, died suddenly May 3 when thought to be recovering from a fall of a few days previous. He was widely recognized as a merchant and philanthropist.

William Goldman, aged 69, president of Cohen, Goldman & Co., New York clothiers, died April 9 after a short illness. Mr. Goldman's activities spread far beyond his immediate business and he was recognized as an authority on wool. He was active in the Mutual Adjustment Bureau of the cloth trade, and his ability as an economist was widely recognized among woolen and worsted manufacturers.

William H. Hodgson, woolen and worsted designer lately with Shirreffs Worsted Mill, died at Fitchburg, Mass., recently. He was a native of Yorkshire, England.

George M. Fletcher, aged 71, formerly vice-president of H. R. Mallinson & Co., New York, died in Los Angeles, Calif., recently. From 1904 he was with M. C. Migel & Co. He retired in 1927.

Frank L. Jerauld, aged 83, senior partner in Winsor-Jerauld Mfg. Co., textile machinery, Providence, R. I., died April 12 at Cranston.

Thomas F. O'Connell, aged 68, vice-president and sales manager of Paramount Textile Machinery Co., Chicago, Ill., died April 13 at St. Petersburg, Fla.

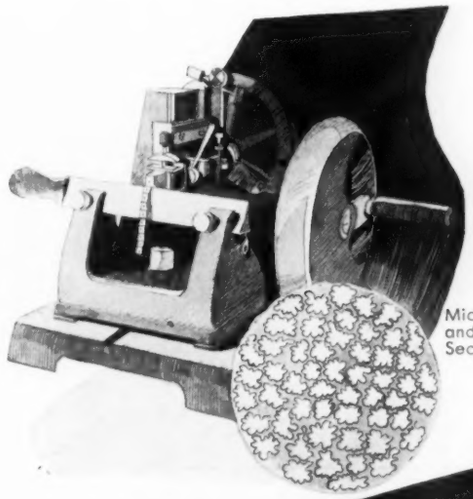
William M. Heywood, president of Heywood Narrow

53 Fibres in Cross-Section!

If a yarn is spun from PHRIX BF, there will be 53 fibres per 100/l. (Engl.) in the cross-section. If the same yarn had been spun from ordinary staple fibre, there would only be 35 fibres in the cross-section of yarn.
It is thus clear that the extreme fineness of PHRIX BF increases the entire inner fibre-surface, thereby increasing resistance to friction, i.e. a PHRIX BF fine yarn will not only be easy to spin but will also result in exceptionally good efficiency figures.

PHRIX German Staple Fibre

BM FOR MIXING WITH COTTON
BR FOR PURE 3 CYL. YARNS
BF FOR PURE 3 CYL. FINE YARNS
BH WATER REPELLENT FOR SPECIAL YARNS
KN NORMAL FIBRES FOR WORSTEDS
TW FIBRES FOR CARPET-MAKING INDUSTRY
BK CURL FIBRE FOR THE COTTON SPINNER



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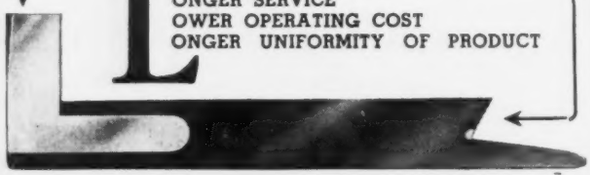

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NEW YORK BOSTON PHILADELPHIA CHARLOTTE

Fabric Co., Fall River, Mass., died recently at Cocoa, Fla.

Frank Pierce Carpenter, aged 92, who had been a director of the now defunct Amoskeag Mfg. Co., Manchester, N. H., the American Cotton Duck Co., and the Columbia (S. C.) Water Power Co., died in Manchester, N. H., April 13.

Eli Gledhill, aged 71, for many years proprietor of Mystic (Conn.) Mfg. Co., and well known through long association with the wool goods industry, died late in April at his home in Fleetwood, N. Y.

Silas A. Tucker, aged 51, manager of the Chicago Mechanical Rubber Goods Branch of Manhattan Rubber Mfg. Co., died in Evanston, Ill., April 14.

Donald M. Giles, aged 48, president of Giles Dyeing Machine Co., died at Philadelphia, April 27. He became associated with his father in the Giles firm in 1913 and had been head of the company since 1931.

George B. Gibson, aged 67, president of Southern Silk Mills, Spring City, Tenn., died April 25.

A. Steve Nance, aged 43, southeastern director of the TWOC, died at an Atlanta, Ga., hospital on April 3 of a paralytic stroke.

Enos G. Fillman, aged 57, superintendent of S. M. S. Silk Co., Allentown, Pa., died April 1.

Frederick Webb, a director of the Massasoit Mfg. Co., and of the Charlton Mills, Fall River, Mass., died at his home in Portsmouth, R. I., on April 7. He was a native of England, and came to America in 1895.

Archie J. Tucke, aged 57, secretary and assistant treasurer of the E. H. Jacobs Mfg. Co. and the Williamsville Buff Mfg. Co., Danielson, Conn., died at his home in Cambridge, Mass., on April 7.

Charles W. Shanks, aged 52, plant superintendent of the Warrenton Woolen Co., Torrington, Conn., died March 23 at Charlotte Hungerford Hospital.

Adolph Bachmann, associated with the Warp Twisting-In Machine Co. for over 23 years, died after a short illness at his home in Midland Park, N. J., on April 6.

Robert Henry Craig, aged 70, retired superintendent of Harriet Cotton Mills, Henderson, N. C., died at his home April 22.

Allen A. Gold, aged 90, formerly associated with the Empire Worsted Mills, Jamestown, N. Y., died recently.

Robert H. Beattie aged 63, president Beattie Mfg. Co., Little Falls, N. Y., died recently at his home in New York.

Benjamin B. Rosenwasser, aged 47, vice-president of Benrose Silk Co., New York, died recently.

George Bonar, aged 67, president of White Lamb Finlay, Inc., New York, and head of Low & Bonar, Dundee, Scotland, operators of a group of flax and jute mills, died in Dundee, April 7.

John W. Bolton, aged 76, formerly general superintendent of Cleveland (Ohio) Worsted Mills Co., died April 3. He had been with that firm at the time of his retirement in 1923, for 24 years.

Anthony J. Burgun, agent for Springdale Finishing Co., Canton, Mass., for the last 14 years, died suddenly April 9.

Sir Henry Sutcliffe-Smith, aged 74, executive director of Bradford Dyers Association of England, died at Cannes, France, March 30.

John C. Campbell, aged 78, president of Newark (N. J.) Wire Cloth Co., died recently. He had been associated with the wire cloth industry for 60 years.

James L. Eadie, a textile executive in New England for 40 years, died recently in Waterford, Me. He had been connected with plants in Utica, N. Y., Lowell, Mass., Pittsfield, Mass., Tilton, N. H., and Lisbon Falls, Me.

Mrs. Mary A. Healy, manufacturing superintendent for the Vesta Underwear Co., Providence, died in Providence March 28.

C. E. Blakely, aged 43, southern representative of the National Aniline & Chemical Co., with headquarters in Charlotte, N. C., died March 4.

C. L. Bumgardner, aged 52, superintendent of Climax Spinning Co. and Majestic Mfg. Co., Belmont, N. C., died March 4 in a hospital at Charlotte, N. C., following a prolonged illness.

John P. Reardon, aged 61, Bay State, Mass., retired silk buyer of the Corticelli Silk Co., Northampton, Mass., died April 3.

Craig Russell, superintendent of the Warrenville, S. C., plant of the Graniteville Mfg. Co., was drowned on Friday, March 25, in Savannah River.

"THAT PROCTOR & SCHWARTZ EXHIBIT OPENED MY EYES"!

May 8, 1938

Dear Bill,

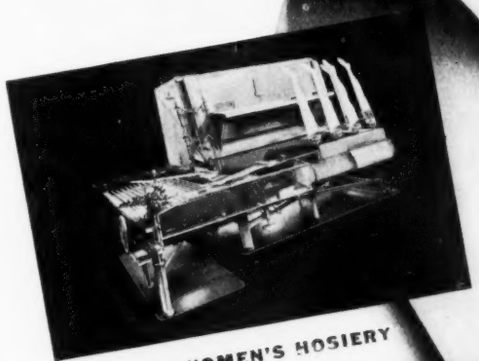
Last week I went over to the Knitting Arts Exhibition in Philadelphia and believe me, I'm glad I did. That Proctor & Schwartz exhibit opened my eyes! They have two new Automatic Boarding Machines that are almost human. As I told you last month, I've been trying to figure a way to cut down production costs; and boy, that P. & S. machine is the answer to my prayer! And while it's cutting costs, it will improve quality at the same time.

I certainly was sorry that you couldn't be there ...because I think that half-hose machine of P. & S. is just what you need. Enclosed are photos of both machines. Of course, you can't tell much about them from the pictures, but I suggest that you do just what I'm doing...write to Proctor & Schwartz and get all the facts. I've bought from them before, and they know their stuff when it comes to drying anything! Your inquiry won't obligate you in any way, I know that.

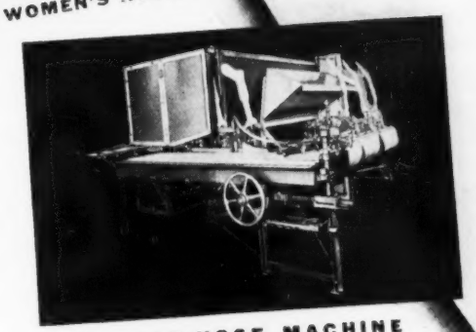
Sincerely,

Joe.

JB:S



MACHINE FOR WOMEN'S HOSIERY



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MILL NEWS

Cotton Mill News

Alabama Mills Co., Jasper, Ala., recently installed a Barber-Colman high speed warper and spooler.

Lanett (Ala.) plant of the **West Point Mfg. Co.** is erecting a one-story addition to its plant at a cost of $50,000.

Alabama Mills Co., Wetumpka, Ala., is having machinery installed which has been moved from Ware, Mass.

Lloyd E. Cone Thread Co., East Hampton, Conn., has been incorporated for $50,000 to manufacture thread by Lloyd E. Cone, formerly associated with Summit Thread Co. The new company has leased a plant in Moodus.

U. S. Rubber Products, Inc., Hogansville, Ga., has awarded general contract to Batson-Cook Co., West Point, Ga., for one-story addition to be used as a warehouse.

Pepperell Mfg. Co., Lindale, Ga., suffered damage recently when several sections of the mill were under water, as a result of overflowing of Silver Creek.

Bibb Mfg. Co., Macon, Ga., has work under way on an addition 50x200 ft., three stories. It will cost, including machinery, $100,000.

Colonial Chenille Corp., Rome, Ga., newly organized bedspread company, has leased the No. 2 plant of the Rome Hosiery Mills, in which machinery will be installed. S. Gindi, David Joseph and Raymond Beyda will be the incorporators.

Providence (Ky.) **Textile Works, Inc.,** have been chartered with capital of $30,000, and plan early operation of a cotton mill. Incorporators include Walter J. McClelland and M. H. Hymson, both of Providence.

Charlton Mills, Fall River, Mass., have been acquired by General Cotton Supply Corp., Fall River, for a stated consideration of $402,000, and property will be liquidated.

Lawrence Mfg. Co., Lowell, Mass., has removed about 27,000 old spindles from its mill. No other spindles for replacement are planned.

Booth Mfg. Co., New Bedford, Mass., at mortgage foreclosure auction sale, was purchased for $20,000 by Reconstruction Finance Corp. The property is carried on the books of the corporation at more than $2,000,000. RFC holds a $300,000 mortgage and hopes to find an operator for the property.

Pacific Mills, Manchester, N. H., Division, is running out its work preparatory to shutting down. This plant comprises four of the former Amoskeag plants operated under lease.

Cannon Mills Co., Kannapolis, N. C., has begun the construction of an addition to the company's bleachery, which will enlarge the storage division.

Caraleigh Mill, Raleigh, N. C., will soon be put into operation under new ownership. The new owners are said to have paid $25,000 for the mill.

Smithfield (N. C.) **Mfg. Co.** has installed new machinery, including drawing frames, No. 102 winders, 10 additional cards and the latest vacuum card stripping.

Statesville (N. C.) **Cotton Mill** has work nearing completion on a two-story addition, 38x66 ft., for office and operating service.

Lawrence Tape Co., Lancaster, Pa., will concentrate its activities at Lancaster, its Chicago office having been discontinued on April 30.

Winters Narrow Fabrics Co., Philadelphia, Pa., recently organized, has leased a floor in building at Hope and Palmer Sts.

B. B. & R. Knight Corp., Providence, R. I., has completed reorganization and will be known in future as the Fruit-of-the-Loom, Inc.

Springs Cotton Mills, Eureka plant, Chester, S. C., has begun the construction of 20 new dwellings.

Virginia Mfg. Co., Fountain Inn, S. C., is spending $75,000 on a modernization program.

Graniteville, (S. C.), **Mfg. Co.** has completed enlargement of the mill building for better arrangement of existing machinery.

Southern Weaving Co., Greenville, S. C., has recently completed a new office building at cost of $10,000.

Tennessee Tufting Co., Nashville, Tenn., newly organized, has taken over the che-

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MILL NEWS

nille bedspreads, bath mats and rugs manufacturing department of Ingram Mfg. Co. Ingram is now concentrating on production of yarns.

Dominion Fabrics, Ltd., Dunnville, Ont., have awarded general contract to Wells & Gray, Ltd., 17 Queen St., East, Toronto, Ont., for new one-story addition, 60x200 ft. Cost over $60,000, with equipment.

Wool Mill News

A. G. Dudley heads an organization which plans operation of a blanket mill at Athens, Ga. Mr. Dudley is president of Athens Mfg. Co. and Climax Hosiery Mills.

Shamrock Woolen Co., recently organized with $50,000 capitalization, has bought the former plant of Peterbrook Mills, Leicester, Mass., known as the Brick City Mill and at one time operated by the River Woolen Mill, Inc. Officers of Shamrock correspond with officials of George E. Duffy Mfg. Co., Worcester and Cherry Valley, Mass. Walter E. Duffy is president and Ralph E. Duffy, treasurer. The plant will manufacture women's fabrics and cloakings.

Stephen Spinning Co., which has leased one of the Amoskeag plants at Manchester, N. H., for the last year, has now bought it.

American Woolen Co., New York, N. Y., has sold its mill at Sawyers Bridge, Dover, N. H., known as the lower mill, to Marks Brothers Co., South Boston, Mass., for another line of production.

Louis Kramer Woolen Mills, Stoney Creek, Pa., has had its sale confirmed by the court. The property brought $44,481 from various bidders.

Erben Harding Co., Tacony, Pa., sold its wool scouring, dyeing and combing plant at auction recently for $22,000. The spinning department will be continued in operation.

Southern Worsted Corp., Greenville, S. C., reelected officers with J. W. Newkirk, president, at its annual meeting recently. E. Inman, master in equity has recommended the company be dissolved. Operations for 1937 were reported to have resulted in a net profit of $68,290.

Rayon & Silk Mill News

Sidney Blumenthal & Co., Inc., Shelton, Conn., have filed plans for two one-story additions to local mill on Canal St., to be used for expansion in finishing division and other service.

Velvet Textile Co., West Haven, Conn., bankrupt, lists liabilities at $188,834 and assets at $311,081. It hopes to reorganize.

Rossie Velvet Co., Willimantic, and Mystic, Conn., realized $125,000 from auction of its machinery April 6. With this sale a leading New England velvet manufacturer passes out of existance. Sale was attended by 1,000 prospective buyers. Samuel T. Freeman & Co., Boston, Mass., was auctioneer. A total of 364 looms were sold to Cheney Brothers, South Manchester; J. B. Martin Co., Taftville; American Velvet Co., Stonington; and Sidney Blumenthal Co., Shelton.

Douglass (Ga.) **Silk Products Corp.** has installed 15 additional machines in a new addition, 55x230 ft.

Quaboag Textile Mills, West Warren, Mass., has been formed to make novelty fabrics of rayon, tinsel, cellophane, etc. Jehiel Weintraub, president, was killed in an automobile accident shortly after the organization was perfected. He formerly operated Maryland Silk Mill of West Warren, liquidated a year ago.

Milford (N. J.) **Silk Co.,** has been formed by John H. and Nelson Gunning to operate the former Milford Silk Mill, which they have leased. The Gunnings formerly operated Gunning Silk Co. in Easton, Pa.

Paterson (N. J.) **Silk Throwing Co.** has purchased the machinery of Monarch Throwing Co. and will remove the equipment to its main plant in Phoenix Mill Bldg., Paterson.

Champlain Spinners, Inc., Whitehall, N. Y., have expanded and are operating at capacity.

American Enka Corp., Enka, N. C., is contructing a one story addition to its chemical division at a cost of $60,000.

Georgetown Silk Co.'s throwing unit at Durham, N. C., is constructing an addition and making other improvements to the plant.

Ross Fabrics, Inc., Morganton, N. C., recently organized by James F. McGimsey, Morganton, and associates, with

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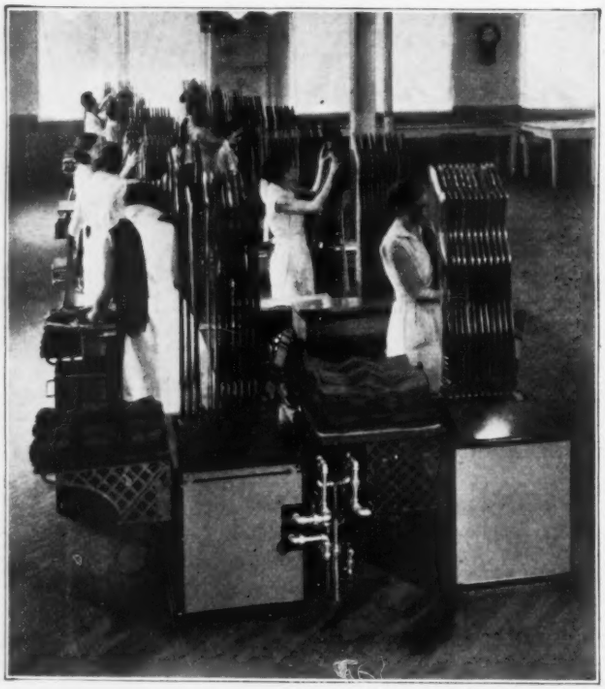

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MILL NEWS

capital of $50,000, has arranged for a long-term lease of one-story building to be constructed by Dr. E. W. Phifer, Morganton, and will occupy for production of tapestry and upholstery fabrics. Cost estimated over $40,000, with equipment.

Joseph M. P. Ott, Pawtucket, R. I., son of the former president of the Royal Weaving Co., has arranged for purchase of a section of that plant, and will operate as a silk and rayon weaving mill. Plant was closed recently and stockholders voted to liquidate.

Batesburg, S. C.—Dr. A. L. Ballenger, Batesburg, representing local citizens, has negotiations under way with a manufacturer of rayons, name temporarily withheld, for the construction and operation of a mill on site along Lightwood Knot Creek, plant to cost in excess of $150,000.

Jefferson Silk Mills, Pulaski, Va., recently organized, has completed construction of new one-story mill, totaling about 22,600 sq. ft., which is being operated on a three-shift schedule. The new mill is air-conditioned. T. J. Wallner, head of the Virginia Maid Hosiery Mills, Inc., and Wallner Silk Hosiery Mills, both of Pulaski, is vice-president of new company. The thrown silk production of new mill will be used primarily by last two noted companies.

Knitting Mill News

Shugart Hosiery Mills, Fort Payne, Ala., have selected Lyerly, Ga., for a mill site. A new brick building, 55x150 ft., is being built to be finished probably around July 15. The company is capitalized at $25,000.

Lewes (Del.) **Hosiery Mill Co.** has been chartered and will begin production at early date. Company has a nominal capital of $10,000. Incorporators are James M. Tunnell, Sr. and Jr., both of Georgetown, Del. Julius Heins, Lewes, will represent the company.

Rodgers Hosiery Mills, Athens, Ga., will soon complete the installation of 11 new hosiery machines at a cost of about $11,000 each.

Columbia (Miss.,) **Knitting Mills** have installed new machinery that will almost double former output.

Elgin Knitting Mills, Inc., Jersey City, N. J., is now controlled by David Rubenstein, who has taken over the interest of his two former partners.

Globe Knitting Mills, Amsterdam, N. Y., formerly owned by John K. Stewart & Sons, was almost completely destroyed by fire on April 16 with damage estimated at $100,000.

South Knitting Mills, Inc., 54 West 21st St., New York, N. Y., have leased manufacturing space in building at 40 West 22nd St.

Sangamon Knitting Co., Watertown, N. Y., was damaged by fire on April 15 with a loss in stock estimated at $15,000.

Thomas A. Oliver, Jenkintown, Pa., will operate a full-fashioned silk hosiery mill at Aberdeen, N. C., in plant being constructed there, one story brick and steel, 60x115 ft., which will be air conditioned, equipped with sprinkler system and oil burning heating system. It will be equipped with eight of the latest model Reiner machines.

Crawford Hosiery Mill, Ashboro, N. C., has installed 14 new Reading full-fashioned machines.

Rufus D. Wilson Full-Fashion Hosiery Mill, Burlington, N. C., has awarded contract for addition to the present plant, doubling capacity to Bryan & Bailiff, local contractors. The present plant is equipped with 20 machines.

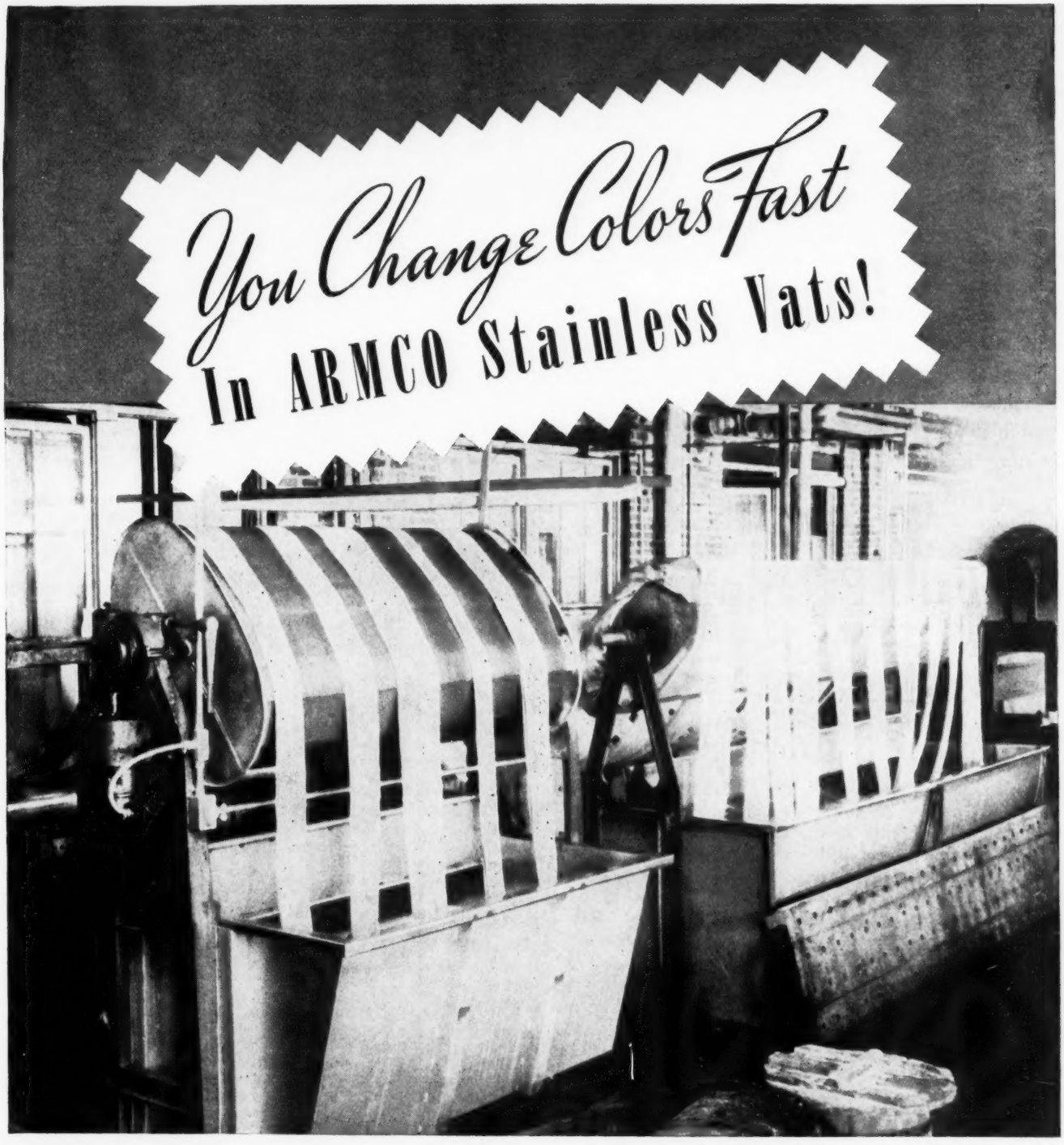
Hugh Grey Hosiery Co., Concord, N. C., has completed its new buildings. Installation of machinery will be pushed. Main building is 120x75 ft. with dyeing division and boiler room attached.

Mock - Judson-Voehringer Co., Inc., Greensboro, N. C., has awarded the contract to C. M. Guest & Sons, Greensboro, for construction of a new office building at a cost of $20,000.

Adams-Millis Corp., High Point, N. C., has purchased property near Tryon, N. C., and awarded the contract to C. M. Guest & Sons, Anderson, S. C., for construction of a mill unit, two stories to contain 35,000 sq. ft. of floor space. Work started last month.

Jackson Hosiery Mills, Inc., High Point, N. C., began operations the last of April. The new concern was organized by W. M. Field, Dr. W. L. Jackson and J. Archie Myatt, who purchased the assets of the Huntley-Jackson Hosiery Co., under an order of Federal district court.

Robert L. James & Son, Marion, N. C., announces plans



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—how to assemble and adjust the machine—pages 103-108
—the diagram of the cross-section assembly of the machine—page 110
—how to prevent loop distortion while narrowing—pages 138-143
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MILL NEWS

for an expansion program of approximately 25%.

Mount Holly (N. C.) **Knitting Mills Inc.,** has been chartered to manufacture, buy and sell all kinds of hosiery and knit goods. Authorized capital is 100 shares, no par, with four shares subscribed by D. S. Beatty, W. H. Hammond, George D. Jenkins and K. N. Summey, all of Mount Holly.

F. F. Laughlin Hosiery Mills, Inc., Randleman, N. C., recently organized with capital of $100,000, have plans for one-story mill, to be equipped for production of full-fashioned hosiery, to cost close to $60,000, with machinery. New company is headed by F. F. and T. L. Laughlin, Archdale, N. C.; and A. B. Beasley, Randleman.

Stanfield (N. C.) **Hosiery Mill** was placed in receivership April 20.

Fremont Hosiery Mill, Thomasville, N. C., is enlarging its plant.

Francis - Louise Hosiery Mill, Valdese, N. C., has begun the construction of a building, 112x56 ft., to be completed by end of June. A number of legger and footer machines will be installed, the equipment having already been purchased. A large part of the stock in the new concern was subscribed by Francis Garrou, Jr., Henry Grill, Jr., and Benjamin Grill, all of Valdese.

Gibbs Underwear Co., Philadelphia, Pa., has leased additional space in building now occupied at Indiana Ave. and A St., for increased capacity.

Kline Knitwear Mills, Philadelphia, were sold at auction to various buyers on April 27.

Vanity Fair Silk Mills, Reading, Pa., have awarded general contract to Agee & Kimbrough Co., Pine Hill, Ala., for new one-story mill at Monroeville, Ala., estimated to cost about $45,000, with equipment.

Chilhowee Mills, Inc., Athens, Tenn., have asked bids on general contract for one-story addition, 43x135 ft., and will install new full-fashioned hosiery machines to double present capacity. Cost over $75,000, with equipment.

Richmond Hosiery Mills, Chattanooga, Tenn., have purchased and installed two additional full-fashioned machines in Rossville, Ga., full-fashioned unit.

Dayton (Tenn.) **Hosiery Mill** has filed a reorganization plan under 77-B.

Walter Schroeder, Niota, Tenn., vice-president of Niota (Tenn.) Mills, Inc., is completing the erection of a one-story building at Dayton, Tenn., and will soon install a number of full-fashioned hosiery machines and auxiliary equipment.

Strickland Hosiery Mills, Petersburg, Tenn., suffered damage by fire estimated at $20,000.

Cape Charles, (Va.) **Hosiery Mills, Inc.,** is installing machinery. Women's hosiery will be manufactured.

Wytheville, Va.—C. A. and Albert B. Carpenter have bought the plant formerly run by Inspiration Hosiery Co. and will equip with modern machinery for half-hose production.

Kenosha, Wis.—A citizens' committee is working on a plan to reopen the Allen-A Co. plant.

Supersilk Hosiery Mills, Ltd., London, Ont., will soon construct two-story addition, 65x100 ft., estimated to cost over $65,000, with equipment. Watt & Blackwell, Ltd., Victor Building, London, are architects.

Processing Plant News

Waldrich Co. (originally incorporated as the Waldrich Bleachery) Clifton, N. J., has merged with Worthen & Aldrich Co. and Waldrich Realty Co. of Passaic. The new company continues as the Waldrich Co.

Crown Converting Co., Lincolnton, N. C., recently organized, has leased part of former Eureka mill property, and will equip for dyeing and winding cotton yarns. W. M. Lentz is head.

Lyons Textile Printing Co., recently incorporated will occupy the former Tremblau silk mill in Allentown, Pa. J. C. Van Loon is president and general manager.

United States Finishing Co. has concentrated administration, accounting and purchasing departments at Norwich, Conn., by removal from Providence, R. I.

Rock Hill (S. C.) **Printing & Finishing Co.** has begun the printing of rayon fabrics as well as continuing the printing of cotton.